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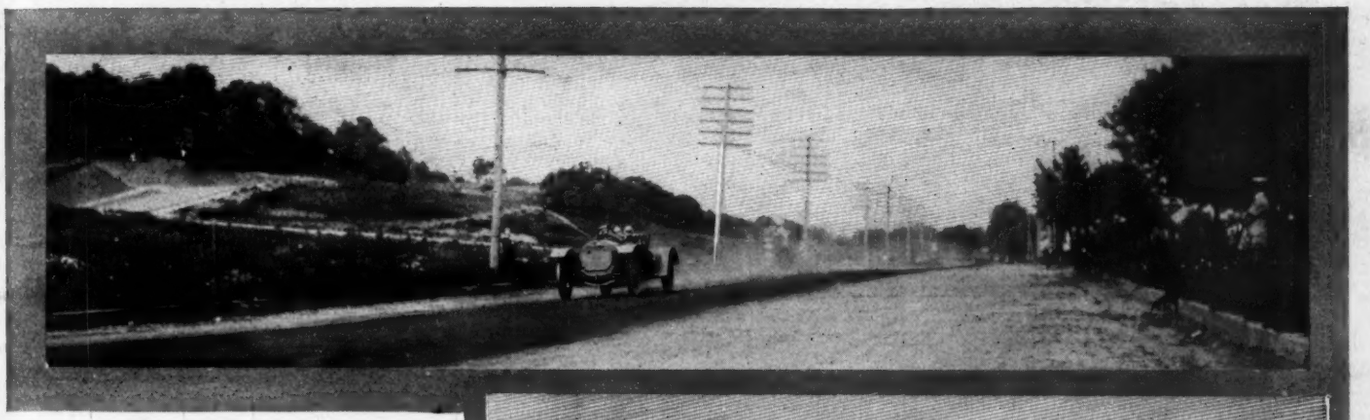
MOTOR AGE

RECORD SPEED SHOWN IN JAMAICA TRIALS



HOTCHKISS IN SPEED FLIGHT

CARS FROM THE PARADE LINED THE ROAD

NEW YORK, June 6—Straightaway sprinting on an average American macadam highway had a renaissance on Hillside avenue, Jamaica, Long Island, on Friday, in connection with the subway opening celebration, that might more properly be termed the inauguration of a new form of road racing in this country. Away back in 1901—November 26 to be exact—Henri Fournier made the first officially timed mile trial in a Mors machine and set up a record of 51⅘ seconds. That same day there were other trials by other classes of cars, including, by the way, a run by A. L. Riker in an electric racer. Old timers will remember standing in close lines as Fournier flashed by, missing the ignorant, foolhardy spectators and newspaper men almost by inches. Those trials were the forerunners of another sprint meet, which took place on Staten Island, on May 30, 1902, over a curved and ungraded course. The fatalities that were the outcome are a part of motor racing history, and resulted in sprint racing in this country being transferred to Ormond beach. Since the Staten Island races there have been no sprint races to speak of on the public road beyond occasional minor attempts like those at Long Branch, Wildwood, and Lowell. It is to be noted that that 51⅘ seconds mile of Fournier's remained unbeaten until W. K. Vanderbilt, Jr., startled the world with his 39 seconds over the sands at Ormond.

STAND WAS PACKED WITH INTERESTED SPECTATORS

There have been annual sprint meets at Nice and Ostend in France, and several of lesser note in England, but not until Friday last had any series of straightaway short distance races been attempted in this country. It is a gratifying sign of the times that road contest promoters now look first to public safety and that it is so generally admitted that the highways must not be used for racing, except when due precaution has been taken to guard the course by soldiers in long distance and by police in sprinting events.

The Long Island Automobile Club, which coöperated with the subway committee in the promotion of the affair and managed outright the racing itself, saw to it that due protective precaution was taken, and the city of Brooklyn backed them up with over 500 policemen and cycle cops. Enough said. So well did the guards do their work that 20,000 people saw the races at Jamaica, Long Island, with safety, pleasure and convincing profit.

The course was a 3-mile stretch, which was well oiled and rolled. It had two turns, but so gentle as to slow down the cars almost inappreciably. The mile racers had but a single curve to negotiate and the kilometer sprinters none.

The outcome of the trials was not only a convincing demonstration of the speed possibilities of stock cars, but also an eye-opener to the progress that since Fournier's time has been made in the development of motor car speed. Even though

C. A. PATCHSKE, ACME DRIVER

records for the mile and kilometer, 28⅕ and 18⅗, were naturally not approached.

In every event new stock car road racing records were set up to furnish stand-

TIMERS' STAND AT THE JAMAICA SPEED TRIALS

the course, be it repeated, was but an average stone highway, figures were set up that will compare favorably even with those achieved over the famous stretch of sand between Ormond and Daytona.

The king pin of the speeders proved to be the 120-horsepower Hotchkiss, which Elliot F. Shepard drove in the last Vanderbilt race, now owned by Harry Levey, an enthusiastic amateur, who came into the racing game at the last Ormond beach race. With H. Kilpatrick at the wheel it scored 24⅘ seconds for the kilometer (90.93 miles per hour), 38⅗ seconds for the mile (93.26 miles), and 1.19⅕ for the two miles (90.90 miles).

The 20 seconds for the kilometer made by Guiness with a Darracq in France was not touched, nor was Demogeot's 58⅗ seconds made with the 200-horsepower Darracq on Ormond beach, reached, but W. K. Vanderbilt, Jr.'s beach record of 39 seconds for the mile was beaten on this Long Island road, and this best sets an estimate on the value of Friday's performance on Hillside avenue, Jamaica. This gives to Mr. Levey's car and driver American road records at all three distances and world's road records for the mile and 2 miles. The Ormond steam

ard marks, to be striven against at the future road sprint meets, which are bound to become popular and run in all parts of Savannah and Westchester by evolving as the country under adequate military or police protection.

The Isotta followed up its successes at the runner up to the Hotchkiss, the latter a specially built racing car, with a kilometer in :27⅗, a mile in :42⅘, and 2 miles in 1:28⅘. It is to be noted that both the Hotchkiss and the Isotta were shod with Michelin tires.

The Fiat Cyclone sadly missed the pilotage of the late Emanuel Cedrino. George Robertson essayed the task and secured :30⅘ for the kilometer, and :46⅗ for the mile. G. P. Parker in a stock Fiat attained a speed of 1:34 for 2 miles on this straightaway.

The class for four-cylinder cars over $4,000 attracted much attention. In it the Stearns duplicated its recent Fort George hill climb success by landing four machines over the tape, one, two, three, four, in almost equally fast time.

Jefferson deMont Thompson, the referee, was forced to disqualify quite a bunch of cars in this class for not meeting entry blank requirements, but generously and happily cut the Gordian knot by offering special cups for those he had had to put outside the breastworks. The Hotchkiss, Isotta and Fiat finished one, two, three.

The six-cylinder Mora, a make to be seen in the Vanderbilt cup race, signalized its racing debut by winning the $3,001 to $4,000 class. The Pennsylvania, whose speed was tipped so confidently at Savannah, made good by carrying off the $2,001 to $3,000 event. The Acme, another speedy Savannah contender, captured the $1,251 to $2,000 sprints. Among the little fellows under $1,250, there was nothing to it but the Mitchell, which finished first and second. The six-cylinder race went to a Stearns, driven by a private

TABLE OF TIMES MADE IN SUBWAY DAY STRAIGHTAWAY SPEED

FREE FOR ALL

Car	Entrant	Driver	2 miles Time	2 miles Rate	1 mile Time	1 mile Rate	Kilometer Time	Kilometer Rate
Hotchkiss	Harry Levey	Kilpatrick	1:19 1-5	90.90	:38 3-5	93.26	:24 3-5	90.93
Fiat Cyclone	Fiat Auto Co.	Robertson	1:51 4-5	64.98	:46 2-5	77.58	:30 4-5	72.62
American	Stuart Elliot	Owen	....	....	:58 4-5	61.22	:37	60.46
Isotta	C. V. Brokaw	Lang	....	....	:42 1-5	85.30	:27 3-5	81.05
Fiat	Fiat Auto Co.	Parker	....	....	:47 3-5	75.63	:28 4-5	77.67
Christie	Walter Christie	Seymour	....	....	....	....	:26 3-5	84.09

FOUR-CYLINDER CARS OVER $4,000

Stearns	Allen-Swan Co.	Swan	1:48	66.66	:52 4-5	68.18	:33 4-5	66.18
Stearns	Allen-Swan Co.	Farrell	1:49	66.08	:52 4-5	68.18	:33 1-5	67.37
Stearns	Caleb Bragg	Bragg	1:51	64.88	:51 2-5	70.03	:35	63.91
Stearns	James Dorg	Dorg	1:55 1-5	62	:54 2-5	66.17	:34 2-5	65.02
Mercedes	E. R. Thomas	Johnson	1:54	63.15	:54	66.66	:33 4-5	66.18

GASOLINE CARS, $3,001 TO $4,000

Mora	Mora M. C. Co.	Dowd	2:08 2-5	56.05	....	....	....	....
Cleveland	Cleveland M. C. Co.	Woods	2:12	54.54	1:28 3-5	40.63	:35 4-5	62.48
Thomas	T. F. Chesebrough	Chesebrough	....	....	:57 1-5	62.93	....	....
Stevens-Duryea	I. M. Allen Co.	McDermott	2:16	52.94	1:08	52.94	:42	53.26

SPECIAL CLASS FOR DISQUALIFIED CARS

Hotchkiss	Harry Levey	Kilpatrick	1:20 1-5	90.25	....	....		
Isotta	C. V. Brokaw	Lang	1:28 4-5	81.08	:42 4-5	84.11		
Fiat	Fiat Auto Co.	Parker	1:34	76.59	:46 3-5	77.25		
American	Stuart Elliot	Owen	1:40 4-5	71.42	:52	69.23		
Allen-Kingston	W. C. Allen	De Palma	1:45	68.70	:52 3-5	68.44		
Mercedes	H. E. Trevor	Trevor	2:08 4-5	56.05	1:04 1-5	56.07		
Peerless	Jack Rutherford	Rutherford	1:56 1-5	52.94	....	....		

GASOLINE CARS, $2,001 TO $3,000

Pennsylvania	Penn. A. M. Co.	Zengel	1:53	63.7	:55	65.45	:34	65.79
Corbin	Corbin M. V. Corp.	Swan	1:55 4-5	62.60	:57 1-5	62.93	:35 2-5	63.19
Pullman	Cimiotti Bros.	Morton	1:56 1-5	62.06	:56 4-5	63.38	:35 1-5	63.55
Pullman	Cimiotti Bros.	Kline	2:08	56.25	1:03 3-5	56.60	:39 3-5	56.48

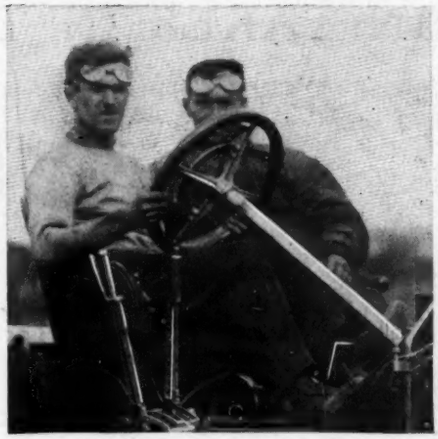
owner, with 1:36⅘, 45 seconds, and 28⅘ seconds as its highly creditable string of performances. A Thomas six was at its heels. The stock chassis, 301 to 550 cubic inches piston displacement, was a merry scrap, the 2 miles going to the Isotta, and the kilometer and mile to the Simplex.

FIRST FOREIGN CUP ENTRY

New York, June 9—The first formal entry of a foreign car for the Vanderbilt cup race has been made. It is a 90-horsepower Mercedes. In fact, it is the same car which Jenatzy drove in the last international race on Long Island. Its entrant is Robert Graves, a member of the racing board, who has made former entries of Mercedes to these races. The making of the entry was a feature of the visit of the newspaper men and others to Mr. Graves' motor lodge at Mineola following the motor parkway inaugural ceremonies on Saturday. At the conclusion of the luncheon, the host of the occasion handed to Jefferson deMont Thompson the entry, accompanied by a check for $1,000 for the entry fee.

"I have not named a driver," said Mr. Graves, "but I am going over to the gradn prix to secure one. I have a bug in my bonnet, by the way, to also enter an American car, for I can see nothing in the rules to prevent a man's making more than one entry."

Mr. Graves in building this private garage has set an example which may be a precedent among enthusiastic followers of the sport. It is more than a mere garage. It is an exclusive motor lodge for the entertainment of motoring parties. It will also be a garage for the big stable of racing cars he is to establish at this convenient point, which is less than a quarter of a mile from the beginning of the parkway.

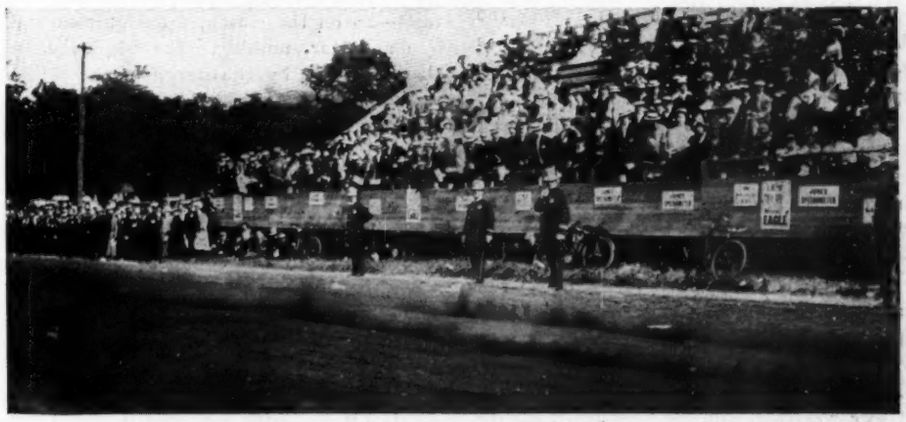


JOHN LANG IN THE ISOTTA

Reposing against a background of stately green cedars the soft gray concrete walls of this restful retreat are livened up here and there by heavy tile roofs of rich red. The dainty proportions and clean outline of the structure, which is purest Spanish Colonial in design, suggests to the eye of the beholder a gem of pearl in a sea of velvety emerald lawn. Two wings, each a complete building in itself, with sloping tile roofs over their three stories and with further dashes of the same rich deep blood red in the tile roofs of their gracefully arched porches, are connected by a long stretch of columnar facade, making a spacious car room with machine room behind.

The west wing of the building is used as living quarters by the owner and his guests, and in the east wing are numerous rooms for employes, a complete stable, and carriage room on the ground floor for casual visitors from across country.

For beauty of design and convenience of arrangement, the building surpasses any structure heretofore erected for an owner's private use. The owner's desire was to provide numerous original contrivances which his own ingenuity and extensive familiarity with the machine convinced him as being essential to a complete and up-to-date garage. From extensive glass skylights over the large car room and machine room, the entire garage is bathed in floods of a beautiful golden light. There is installed an electric clock with adjustable time set and switches in the owner's quarters controlling simultaneously in each guest's and chauffeur's bedroom electric lights and alarm bells for arousing the slumberers to the fray when an early morning start is contemplated by Mr. Graves and his guests.



TRAIL OF DUST LEFT BEHIND BY RECORD-BREAKING HOTCHKISS

PRINCE HENRY TOUR ON

Berlin, June 9—The first stage of the Prince Henry tour started today, the entry list showing a total of 145 cars, nearly all of the car-making nations of Europe being represented. The United States is not on the list, however. The Prince Henry is the successor to the Herkomer and among those striving for the trophy are Edgar Ladenburg in a Benz, who twice won this tour's predecessor. Among the other notables is Prince Alfons von Isenburg, who also drives a Benz, and whose work will be watched with interest.

TRIALS HELD AT JAMAICA, LONG ISLAND, FRIDAY, JUNE 5, 1908

GASOLINE CARS, $2,001 TO $3,000—Continued

Car	Entrant	Driver	2 miles Time	2 miles Rate	1 mile Time	1 mile Rate	Kilometer Time	Kilometer Rate
Pope-Hartford	A. G. Southworth	Hines	2:08 3-5	56.05	1:02 2-5	57.69	:38 2-5	58.25
Ford	Bishop, McCormick & Bishop	Kenny	2:10 4-5	55.30	1:05	55.38	:44 3-5	50.15
Midland	Allenhurst Garage	Holmes	2:35	46.50	1:12	50	.....	....
Imperial	H. H. Tredwell	Owen	2:58	40.45	1:08 1-5	52.78	:42	53.26
GASOLINE CARS, $1,251 TO $2,000								
Acme	Acme M. C. Co	Patschke	2:07	57.09	1:03 3-5	57	:38 3-5	57.95
P. & S.	K. R. Manzille	Manzille	2:22 4-5	50.04	1:07 3-5	53.45	:42 3-5	52.51
Haynes	W. E. Shuttleworth	Shuttleworth	2:23	50.02	1:08	52.94	:42 3-5	52.51
Cadillac	J. D. Rourk	Rourk	2:27	49.10	1:12 3-5	49.52	:43 1-5	51.78
Jackson	G. J. Scott M. Co.	Burman	2:29	48.30	.....	....	:44	50.84
Mitchell	Mitchell M. Co.	Olney	2:31	47.18	1:12 1-5	49.95	.....	....
GASOLINE CARS UNDER $1,250								
Mitchell	Mitchell M. Co.	Delamater	2:32	47.37	1:16 2-5	47.41		
Mitchell	Mitchell M. Co.	Skinner	2:41 4-5	44.52	1:16 1-5	47.43		
Ford	F. J. Nolte	Nolte	3:33	33.8	.....	....		
Ford	R. J. Johnston	Johnston	4:16	28.12	1:30 1-5	40.10		
SIX-CYLINDER CARS OVER $2,500								
Stearns	C. F. Alcott	Alcott	1:36 3-5	74.38	:45	80	:28 4-5	79.32
Thomas	E. F. Buchanan	Buchanan	1:49 1-5	66.42	:52 1-5	68.96	:32	69.90
Acme	Acme M. C. Co	Rogers	1:52 2-5	64.28	.....	....	.....	....
Hotchkiss	C. F. Stoppain	Carouso	1:53	63.15	:58 2-5	61.64	:37 4-5	59.17
Ford	J. P. Disbrow	Disbrow	2:00 3-5	59.40	:59	61.01	:36 1-5	61.79
Mora	Mora M. C. Co	Dowd	2:24 1-5	50	1:06 1-5	54.40	.....	....
STOCK CHASSIS, 301 TO 550 CUBIC INCHES PISTON DISPLACEMENT								
Isotta	C. V. Brokaw	Lang	1:29 1-5	78.94	.....	....	.....	....
Fiat	Fiat Auto Co	Parker	1:32 4-5	77.58	.....	....	.....	....
Simplex	Palmer & Singer	Seymour	1:44 3-5	68.96	:51	70.58	:32	69.90
Pennsylvania	Penn. A. M. Co.	Zengel	1:46 4-5	67.66	:51 1-5	70.31	:32 3-5	68.61
Pennsylvania	Penn. A. M. Co.	Gimble	1:55	62.71	:57 3-5	62.50	:37	60.45
Mercedes	Broadway Auto Ex.	Hawkin	.....	....	.....	....	:44	50.84

RELIABILITY RUN TAKES IN THREE STATES

WASHINGTON, D. C., June 10—Special telegram—Sixteen of the twenty cars entered in the reliability test for the Washington Times trophy started in yesterday's run and of this number thirteen came through and went into the hands of the technical committee for the examination which was to determine the final standing of the contestants. As is usual in reliability runs in which a final examination is included in the rules, a winner was evolved in two of the three classes, while in the third one only two were in a tie. None of the cars escaped penalization.

When the report of the officials was handed in this morning it was found that in the division for light roadsters the Buick and Ford were on even terms, with 2 points each against them. In the other two divisions, however, there was no doubt as to the winner, the Stearns having the honors in the heavy roadster class. In the touring division the Thomas-Detroit produced the cleanest score.

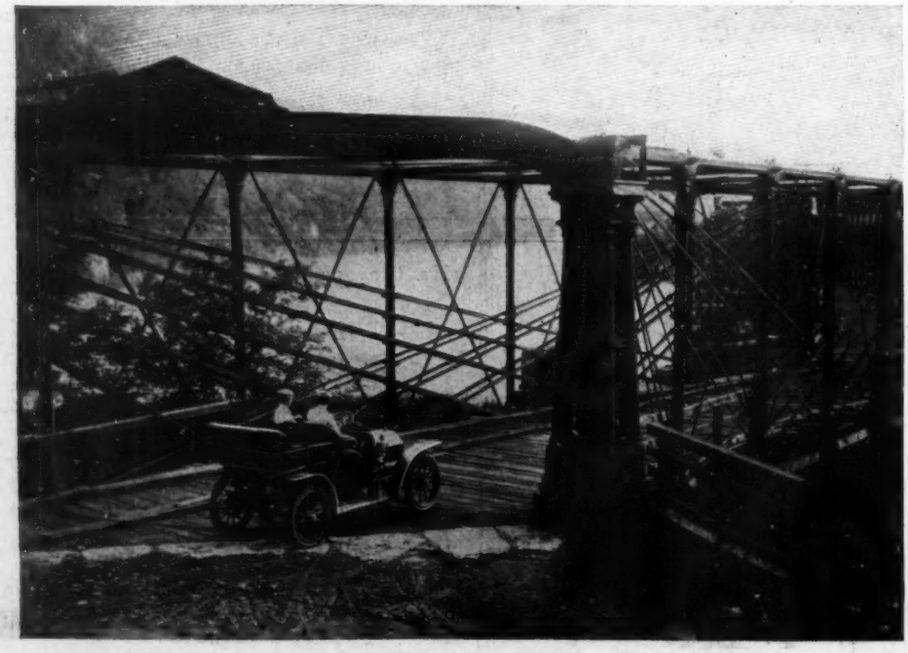
The committee was not satisfied to let the matter rest in the case of the Buick and Ford and all today was spent in debating the pros and cons of the situation, with the idea of evolving a definite winner. The debate was still on this evening.

Thirteen of the cars entered in the run covered the course and underwent the brake, clutch and other tests prescribed by the rules. The contest was a three-divisional affair—for light roadsters, heavy roadsters and touring cars. In the light roadster class there was a duel between the Buick, Ford and Maxwell. The first two finished with a penalization of 2 points each, due to a stalled engine, while the Maxwell, which was not a new car, was penalized 27 points on outdoor tests—20 on the clutch, 2 on ignition and 5 on motor missing. The big roadster class was won by the Stearns with 2 points against it. The muffler hung low and in taking a water break it struck the muffler, causing it to jar loose. The Corbin finished with a clean score so far as the car was concerned, but lost 40 points by being late at the second control. Twenty minutes was lost by tire trouble and 5 minutes at a railroad crossing, but 10 minutes was made up. The Pullman lost 42 points owing to ignition troubles. It developed a pin was lost out of the distributer. The driver first went to the coil box, losing 5 points for breaking seal and 2 points for work. Four more points were lost by stopping the engine. The coil box again was opened and 7 points lost, while 2 points were lost by breaking the battery seal, 10 for breaking the motor seal and 12 more for work done on the car. The Thomas lost 105 points for adjusting a left rear chain, 15 on adjustments and 12 points at the final inspection, 5 for a rumble seat being loose, 6 points for a right rear fender iron being loose and 1 point for a loose pipe joining the muffler.

MAGNIFICENT VIEW OF VALLEY IS HAD AT KNOXVILLE

The Thomas-Detroit carried off the honors in the touring car class, carrying four passengers and finishing with a loss of 15 points imposed for a sprung front anxle, throwing the wheel out. The Cadillac lost 141 points—66 points on road work, carbureter trouble, breaking a bonnet seal, losing 10 points; work, 4 points; taking on water twice, 26 points; outside tests, 65 points, of which 15 were for a front spindle sprung; brake rod disconnected, 50 points. The Franklin had a perfect score as regards time, but was penalized 22 points for road work, which was due to a broken steering knuckle, which made it necessary for a passenger to hold a tin cup over the hub of the wheel, this being done on eleven occasions. It lost 166 points on inspection, of which 150 were for broken steering knuckle, 15 for bent spindle and 1 for loose nut which was detected on a spring clip.

The Mitchell touring car lost 188 points, of which 10 were for breaking a seal on the hood, 10 for work on a valve, 10 for stopping the motor, 10 for breaking a bonnet seal again, 8 for work, 8 for stopping motor again, 80 points for being late at controls, while the car got 52 points on outdoor tests—150 for a bad foot break and 2 for dead bolting. The Columbia was the heaviest penalized car, having 1,058 points against it. The car lost 840 points for being late, being 40 minutes late at second central, 188 minutes late at the third central and 188 minutes late at home. Also it lost 216 points for road work due to cotter pin trouble in the collar on the transmission yoke. At the final inspection the car lost 2 points for a loose part, according to the formal report.



HARPER'S FERRY BRIDGE, WHERE TOLL IS EXACTED

BETWEEN BERRYVILLE AND LEESBURG AND BEYOND CASTELMAN'S FERRY

The Oldsmobile, the pilot car, did no road work but was 150 minutes late in completing the course, owing to tire troubles. On the brake test it lost 35 points for a bad brake, 2 points for a loose running board and 1 for a loose spring clip.

Two cars failed to cover the course, the Maryland coming to grief because a grease cup would not work properly, and the Ford runabout owing to tire troubles. The latter car was left in Berryville. Eight cars had perfect road scores, checking through all controls on time as follows: Franklin, Cadillac, Thomas-Detroit, Buick, Thomas Flyer, No. 8 Ford, Maxwell, Stearns, No. 10 Pullman. Five cars, the Thomas-Detroit, Corbin, Oldsmobile, Maxwell and Stearns, went through the entire run without any road work.

The Washington Times deserves great credit for the enterprise it has shown in developing interest in this motor contest. The Times promoted the first sealed bonnet contest last December. Both were managed by Arthur Newmeyer, advertising manager, who worked day and night to make both contests a success. He is entitled to much praise for his work.

Under a cloudless sky sixteen cars started yesterday on the 164-mile reliability contest promoted by the Washington Times and sanctioned by the American Automobile Association, which proved the best motor event that has ever been held in this section. Weather conditions were little short of ideal and there was not a single accident to mar the success of the event. The contest will undoubtedly prove a stimulus to the trade as well as awaken a sporting interest among capital city motorists. D. Beecroft was referee and he had an admirable staff under him.

The first car, a Franklin, was sent away on its journey through three states—Maryland, West Virginia and Virginia—at 5:30 o'clock, and was followed by the other contestants at intervals of one minute. The pilot car, an Oldsmobile, driven by John Lutz, got away an hour earlier to blaze the way by a trail of confetti. Tire troubles put the pilot an hour behind his schedule, and the pilot honors were wrested from him by the Franklin at Darnstown, 35 miles from the finishing point. Even with a broken steering knuckle the Franklin continued to lead the way into Washington and served to demonstrate that Bliven is a driver of no mean ability.

President Caverly and other officers of the Automobile Club of Washington were apprehensive that the contest would devolve itself into a road race pure and simple and serve to reawaken a feeling of antagonism against motorists among the farmers along the route, which is one much favored by Washington motorists. Happily their fears were groundless, as each driver carefully observed the rules of the road and slowed down to almost a standstill whenever such a step was necessary to quiet a fractious horse. As a matter of fact the contestants were accorded a great ovation all along the route. In towns like Ridgeville, Frederick, Charlestown, Berryville, Leesburg and Rockville, to say nothing of the small settlements, the citizens were on the watch for the cars and as each flashed by yelled encouragingly to them to "hit it up." Washington motordom is highly gratified tonight to know that it stands so well with the people who live in the counties adjacent to this city.

Just before Ridgeville, the first control, was reached, there was consternation among the occupants of several cars that were bunched close together. Lying in the middle of the road just over the brow of a hill a figure was observed. The leading car was almost upon the figure when the driver threw on his emergency brake and signalled to those following. Inspection then revealed the fact that Ridge-

CLARKE'S GAP AT TOP OF BLUE RIDGE MOUNTAINS

ville's village cutup had placed a scarecrow in the path of the cars.

Throughout this route there are eight toll gates, two bridges and a ferry to be crossed, of which a total tax of $3.40 was charged. The different toll gates exacted $1.55, the bridges $1.35, while the ferryman was content with 50 cents for each car. With such a harvest the tollkeepers and bridgemen would like to see a contest of this character every day. Everybody put up a protest about coming across with $1 to cross the bridge at Castelman's Ferry. The sovereign state of Virginia sanctions this and motorists must submit if they wish to cross the Shenandoah river at this point.

Dust hung over the route like a heavy pall and proved very discomforting to both drivers and passengers. Very little air was stirring and as a result every participant was thickly coated with the rich soil of Maryland and Virginia. Frequently along the route road improvements were in progress. Sometimes these consisted of throwing a lot of broken stone upon the road, leaving it to the traffic to make the roadbed. More frequently the ditches on both sides the road were scraped and the accumulations were then thrown into the road bed. Tufts of turf half a foot high are not easy to ride over and they have an annoying habit of getting into the chain.

The ancient town of Berryville, where the second control was located, was all agog over the importance it had attained by being made a stopping place. Gasoline and water were taken on here, a tank wagon being stationed in the heart of the town for the convenience of the tourists. The whole town was on hand to see the sights and the begoggled drivers were pressed with questions about the cars and the time made on the trip.

At White's Ferry, the last control, the checker, Dr. McConnell, had his hands full getting the cars aboard the primitive ferry. The ferry is operated by means of a cable and the assistance of two husky farm hands, who push the boat through the water by means of long poles. The Potomac river at this point is nearly half a mile wide, and as only two cars could be ferried across at one time, and as other road users also wanted to cross there was naturally some confusion. McConnell was diplomatic, however, and jollied several farmers into giving up their turn at the ferry in order that two or three belated cars might cross and make up their schedules.

Through the courtesy of the Luttrell company, the Buick agents, Motor Age was furnished with a Buick, which was driven by W. R. Burns, a factory expert. The car went over the route without mishap. While the car was not sealed, it came through without a single adjustment being made to it. Neither was there any tire troubles, Michelin tires being used. The Motor Age car was in evidence throughout the run, being tagged with a large sign in the rear.

The course was in many respects an ideal one. The total distance was 164 miles and the route was so laid out that the border lines of the three states—Maryland, West Virginia and Virginia—were followed. With the exception of about 30 miles in Montgomery county, Maryland, the route for the most part was over macadamized pikes, intersected every few miles by toll gates. The toll charges were comparatively heavy, especially at Castelman's Ferry, where the Shenandoah river is crossed by means of a bridge. The bridge tender has a standing order to collect $1 from the driver of every motor car crossing the bridge, and he is on the job all the time, despite all the abuse that has been heaped upon him.

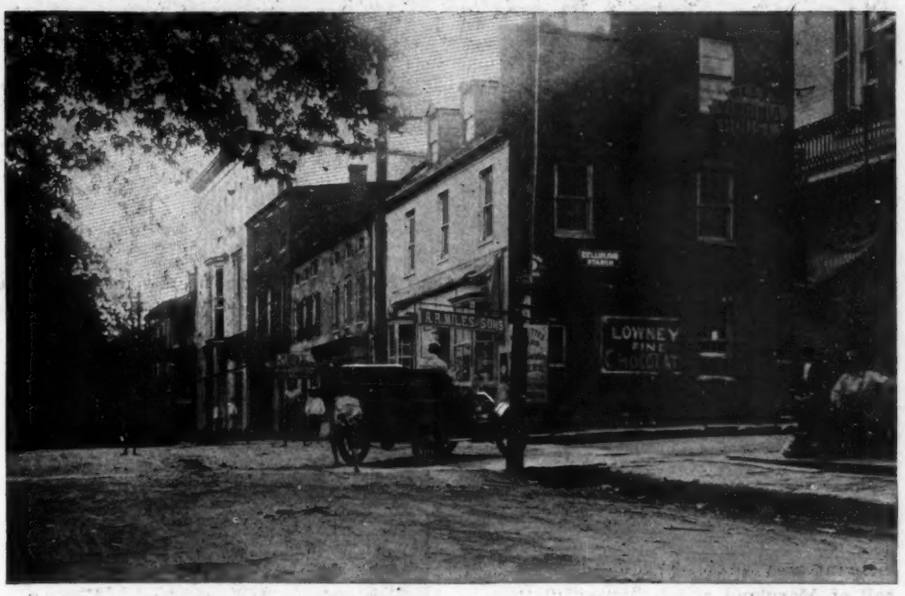
From Washington to Olney is an excellent pike, but after leaving Olney the road to Laytonsville is exceedingly rough and seamed with ruts, which necessitated careful driving. Beyond Laytonsville the road improves and by the time Ridgeville, the first checking station, was reached, the contestants were in good fettle again. The old national road runs through Ridgeville and emerging upon this excellent pike the contestants found a chance to make up the time lost on the dirt road. The distance from Ridgeville to Frederick is 14 miles and is through a beautiful country. Just before reaching Frederick the Monocacy river is crossed by means of a stone bridge erected many years ago. From Frederick to Berryville, Va., via Harper's Ferry, Charleston, W. Va., and Rippon, Va., is 40 miles of the best road and prettiest scenery that can be found anywhere in this section of the country. Sharp hills mark the approach to Harper's Ferry on the Maryland side, and a steep hill in Harper's Ferry itself, but these were minor incidents. From Berryville to Leesburg is a distance of 24 miles, 18 of which are over mountain roads, which, while not first-class pikes, are not nearly as bad as might be expected. There are a number of steep climbs. The road out of Leesburg to a point about 6 miles away where the White's Ferry dirt road turns off abruptly, is good. This road arrives in view of the river in about a mile and turns to the left with great suddenness. This is the only dangerous spot along the whole route. The contestants were duly warned that any man swinging around that corner and off the plain dirt road onto the grass would drop 40 feet to the rocks below. The trap is not apparent because of the manner in which the weeds have grown up the sides of the deep cut into the bank and overlapped, presenting an appearance of the usual grass roadside. Passing White's Ferry the road from that point to Rockville goes from bad to worse. It is filled with water breaks, in addition to which are numerous patches of rock breaking out of the roadway, through which the water has poured in heavy rainstorms. The result is a succession of ruts and seams that are enough to try the patience of a Job. The road from Rockville to Washington is good, being macadamized nearly all the way.

FIVE MINUTES' RUN FROM POOLEVILLE

QUAKERS LIKE MOTOR CABS

Philadelphia, Pa., June 8—After its first week's experience with the taxicab, the Quaker City is inclined to vote the experiment a success, although the limited number of vehicles with which the service was started—ten—rendered a thorough test out of the question. Louis J. Bergdoll, president of the Bergdoll Motor Car Co., which is back of the initial project here, is enthusiastic over the outlook, and after a sufficient number of the vehicles shall have arrived in town promises to cover the central section of the city much more thoroughly than is now possible. At present only Broad street station and other stations

of the Pennsylvania railroad are covered day and night; in the near future the service will be extended to include the Reading stations and the principal hotels. The published rates are: 30 cents for the first ½ mile or fraction thereof; 10 cents for each ¼ mile thereafter; 10 cents for each 6 minutes of waiting—regardless of the number of persons carried. As the majority of the larger hotels are within the ½-mile limit of Broad street station and the Reading terminal, the convenience of the service to travelers especially is apparent. Packages or trunks carried outside are charged for at the rate of 20 cents each. Calls from within ½ mile of the stand are free; outside that limit the charge is 20 cents a mile. Dismissing a cab more than 3 miles from a station is charged for at the rate of 20 cents a mile or fraction in excess of the 3 miles returning to the station or garage of the rig.



HISTORIC HARPER'S FERRY WAS ON THE ROUTE

RECORD SPEED BY NAZZARO

London, June 8—Special cablegram—Nazzaro and the Fiat today created a new world's record on Brooklands track, when the famous Italian driver, just back from the Targa Florio in which he met with an accident, reeled off 2¾ miles at an average speed of 120 miles an hour, which is far in excess of the speed made by Marriott in Florida, the time he did his mile in :28⅘, equal to 113 miles 352 yards an hour.

ITALIAN INDUSTRY IMPROVING

Washington, D. C., June 6—Advices just received by the government are to the effect that in the opinion of well-informed men, the motor car business in Italy will be in better condition by reason of the recent depression than otherwise. It has stopped speculation and insured the business being carried along on a sound basis. The view is generally entertained among well-informed business men in Milan that the depression in the motor car business is the natural result of the tremendous speculation which was indulged in. At first buyers of motor car stock could only see enormous dividends, but no account was taken of the cost of advertising, the cost of races, and other expedients resorted to to push sales, all of which expenses increased enormously as new firms came into the market. At least fifty-two Italian motor car manufacturing firms were organized during the past 2 years, and of this number about twenty-eight were established in Turin. The small firms have now been crowded back, and in many cases the small shops will take up new lines of industry. This they will be enabled to do by reason of the excellent equipment they possess. Large firms like Isotta Fraschini and Fabbrica Italiana Automobil Torino will continue to hold the field. These firms are at present working at a rate equal to about 50 per cent and 65 per cent, respectively, of the rate demanded by last year's orders, and though the business is relatively quiet at their shops these larger firms are managing to hold their organizations together, and will be in position to take advantage of better times.

MINNEAPOLIS BILLS A CLIMB

Minneapolis, Minn., June 9—Under the auspices of the Minneapolis Automobile Club a hill-climbing contest will be held June 27 for a handsome trophy offered by the Minneapolis Journal. At a meeting of the club trustees tonight a letter from the Journal was read, offering to supply the trophy fund for the annual hill-climb, and the offer was accepted. Details of the contest will be in the hands of the tours and contests committee, of which Dr. C. E. Dutton is chairman. Points to be decided are the hill to be climbed, the division of the trophy fund, the handicaps or the division of the competing cars into classes, and whether or not the trophies shall become the permanent property of the winners in the one contest.

PROTEST IN MINNEAPOLIS

Minneapolis, Minn., June 6—John Burmeister and A. C. Kelley of the American Automobile Co., 220 Sixth street south, Minneapolis, have protested the award in the Minneapolis Automobile Club's reliability contest for the Tribune trophy. It is contended in a written communication to John B. Hammond, a member of the awarding committee, that the winning car did not comply with all the rules of the contest and that the award should have been made to a Stoddard-Dayton, instead of the 40-horsepower Thomas-Detroit, driven by O. E. Martin and entered by the Barclay Auto Co. The main contention is that the Stoddard was the only one to cover the course as officially marked by the pilot car. It is charged that seventeen cars started, only one followed the course and only two were disqualified. The decision in the matter has not yet been announced by the committee.

RECORD OF CARS COMPETING FOR WASHINGTON TIMES TROPHY AT WASHINGTON, D. C.

Name of car	H. P.	Cyl. bore	Piston stroke	Car model	Entrant	Driver	Final standing: Time	Penalty	Total
1—Franklin	28	4¼	4	D	Cook & Stoddard Co.	F. S. Bliven	0	188	188
2—Cadillac	25	4½	4	G	Cook & Stoddard Co.	R. Jose	0	141	141
3—Thomas-Detroit	40	4⅝	4½	T D	H. W. Gill	H. W. Gill	0	15	15
4—Buick	18	3⅝	3¾	10	Luttrell Co.	S. Luttrell	0	2	2
5—Columbia	29	4	4¼	Mark 48	Dupont Co.	O. Jacobi	840	218	1,058
6—Thomas Flyer	60	5½	5½	F	Motor Car Co.	A. S. Zell	0	142	142
8—Ford	15	3¾	3¾	S Roadster	Chas. E. Miller & Bro.	C. E. Miller	0	2	2
9—Corbin	30	4½	4½	O	Dupont Co.	J. Watson	40	0	40
10—Pullman	20	3¾	3¾	H	Thomas & Tolman	J. R. Thomas	0	42	42
11—Maryland	26	4	4	26	Thomas & Tolman	G. H. Tolman	Did not finish		
13—Maxwell	14	4	4¼	L C	Thomas & Tolman	G. Padgett	0	27	27
14—Stearns	30	5⅜	5⅜	Vaughn	Le Droit Auto Co.	L. Shaab	0	2	2
16—Mitchell	20	4	4	G	Flynn Motor Co.	R. Flynn			
17—Ford	15	3¾	3¾	R	Chas. E. Miller & Bro.	G. Orme	Did not finish		
18—Mitchell	35	4½	5	I	Flynn Motor Co.	W. P. Shuler	80	108	188
Pilot, Oldsmobile	40	4½	4¾	M		J. Lutz			

WORK STARTED ON LONG ISLAND PARKWAY

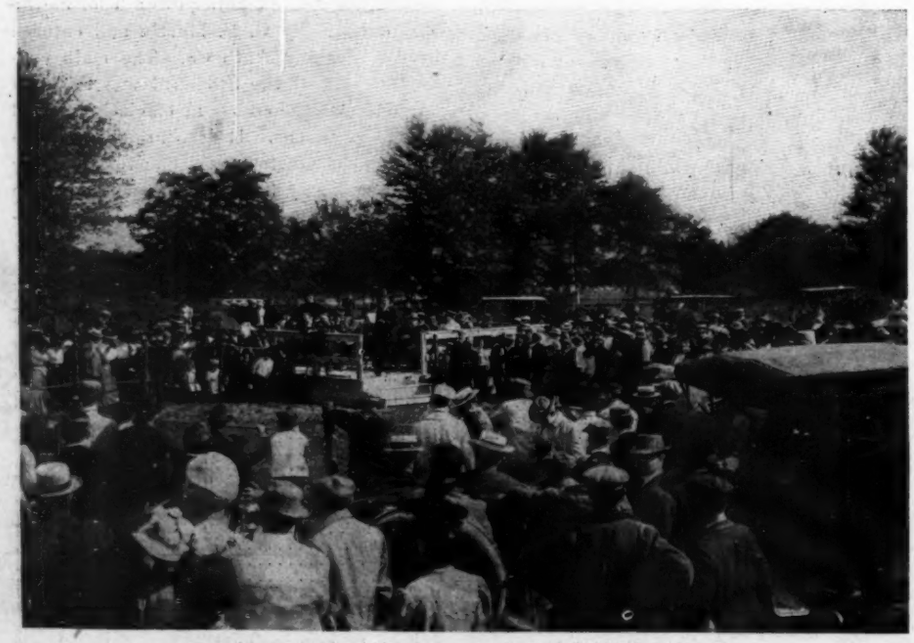
NEW YORK, June 9—With the turning of the first spadeful of earth at Central park on Saturday by A. R. Pardington, general manager of the Long Island Motor Parkway, Inc., acting for its presidnet, W. K. Vanderbilt, Jr., who was kept by illness in his family from participating in the formal start of the work on the project so near to his heart, the long dream of motordom of a stretch of road of its own on which cars might be driven at their utmost speed without danger to the general public was assured of realization. A simple yet impressive and appropriate ceremonial had been arranged in celebration of an event so momentous to the motor car world, not only of New York but of the country at large. There were a few speeches by men who were well entitled to make them, and then, following the tossing of the first spadeful of earth, carts invaded the spot, and a score of laborers attacked the soil with pick and shovel, and a stick of dynamite blew high in the air an impeding tree. An epoch in motoring was inaugurated. An example was set which it is safe to predict other cities and populative centers will not be long in following.

Despite the fact that the place chosen to begin the work on the parkway was remote—a spot on the Jerusalem road near Central park, some 30 miles from Long Island City and 5 miles from Jericho, on the previous Vanderbilt Cup course—fully a score of motorists from New York and surrounding towns were on hand to participate in the celebration. On a raised platform was a full band, which, previous to the ceremonies, gave a concert. The historic spot was roped in. Fringing the ropes were the motor cars, and crowding them were several hundred

PRESIDENT HOTCHKISS, A. A. A., SPEAKS

Long Islanders who had come afoot to witness the start of a work that will mean much to their prosperity.

Sharp at 3:30 o'clock, the time set for the beginning of the ceremonies, Mr. Pardington stepped to the front of the platform, and in an address all too modest gave more than the lion's share of the glory of the parkway achievement to Mr. Vanderbilt, expressed with emotion his regret that the president of the company had been kept away by serious illness in his family, and begged leave to read a brief address prepared by Mr. Vanderbilt by way of expressing his feeling on the occasion:



STAND FROM WHICH THE PARKWAY SPEECHES WERE MADE

"We are here today to celebrate the commencement of work on a road which, when completed, will give to the world one more mode of transportation. There have been in the past highways for all kinds of vehicular traffic, canals for the movement of freight, railroads for the transportation of passengers, and trolleys for the convenience of those living in the suburbs of our large cities; but in no case has the motorist been considered. Although but a few years in existence, the motor car has come into such prominence that it has revolutionized all modes of travel. Distance has been eliminated, highways improved, unknown districts opened up and pleasure given to thousands and thousands of people.

"And now the day of the motor car has come. A highway is about to be constructed for its use, free from all grade crossings, dust and police surveillance, and a country opened up whose variegated charms are hard to equal in any part of the world. We have encountered in our preliminary work of raising funds and procuring right of way many unforeseen obstacles. But land owners in almost every case, seeing what a benefit a road of this character would be to their property, gladly come forward with help, enabling us to complete a 45-mile right of way for our parkway.

"Now came the panic. Hard times were ahead, and it looked serious for the undertaking. Discouraging reports were circulated and other difficulties appeared. Nevertheless, with all these trials and tribulations money slowly came into the treasury, and one obstacle after another was set aside. So that here we are, about 18 months from the time the company was incorporated, ready to turn over the first spadeful of dirt, and this fall will see ready for use 10 miles of the motor parkway."

Judge William H. Hotchkiss, president of the American Automobile Association, was next introduced as one who had been a great friend of the enterprise from its inception. The judge dilated eloquently on the value of organization, and on the benefits the building of such parkways would be, not only to motoring, but to the general public as well. He said:

"On behalf of the militant motorists of the nation, the 20,000 who have organized that they might the better combat prejudice and the sooner compel fair treatment, on behalf of yet other thousands to whom a road restricted to motor cars is like a glimpse of paradise, on behalf of all the men who recognize in works like these the seven-leagued boots of Giant Progress, I congratulate you—I congratulate Mr. Vanderbilt, who conceived this enterprise, and you, gentlemen of the Parkway company, who have assisted in carrying it through; and not the least,

believe me, our old friend Pardington, who 6 years ago was in at the borning of that now thriving body for which I particularly speak, the American Automobile Association.

"The occasion is epochal. When, long years ago, the mounted traveler on the public ways gave place to the stage coach, the first English turnpike was constructed—the stage coach road of our great grandfather's great grandfather. Then came the primitive steam car, and the men of 1830 thought to build a road to fit the new conveyance. They tried, and failed; the steam car took to the rails, and it now has railroads of its own. The roads of the stage coach remain stage coach roads still.

"But now comes another self-propelled vehicle, a steam car in miniature, light, easily operated, reasonably safe in mature hands, but capable of great speed. It, too, has taken to the stage coach roads, but, unlike the steam car, it intends to stay there. It needs no rails; the stage coach road, brought up to date, is enough. Enough, did I say? Not everywhere. In territories such as this—the neighborhoods of great cities and the districts of vast country estates and popular resorts—motor roads, limited to the new vehicle, especially constructed for it, like the railroads, private enterprises of a public nature, have become necessary, and the Long Island motor parkway is the first of such roads anywhere in the world. Here, today, then, the motor vehicle, as it were, takes to its rails, this parkway becomes the younger brother of the railroad, and the men back of it are as truly pioneers as those who stage-coached on rails behind the "Dewitt Clinton" from Schenectady to Albany in this state nearly 100 years ago.

"The occasion is epochal in another sense. It is prophetic. If motor roads are necessary—and who here will deny it—how soon will it be before we need motor streets? Nay, do you not need them in New York now? And, if streets, bridges; and, if bridges, tunnels and subways? Indeed, the day seems not far distant when our great cities, particularly the metropolis, yielding to the demands of a majority of the people—for, before many years have elapsed, a majority will drive motor cars—will build elevated steel pavements up and down and across their main thoroughfares, over the necessary bridges, and connecting up at their termini with roads like this. If such be the ultimate of this occasion; not a man here but will look back upon it with pride and gladness that he was present. Yes, even though, peering into the future through the binoculars of the Aero Club and paraphrasing Faust, he boasts:

'A fiery chariot, borne on buoyant pinions,
Sweeps near me now. I soon shall ready be
To pierce the ether's high unknown dominions,
To reach new spheres of motor activity.'

"His time must bide our time. The motor vehicle will remain terrestrial throughout our generation. So hail, the first motor parkway! And all hail, those pioneers—Mr. Vanderbilt and his associates—who, for the motorists of America and the world generally, are here blazing the trail for the motor roads, the motor streets and the motor bridges of the present motor age."

PARDINGTON WIELDS THE SPADE

The next speaker was August Hecksher, a director of the parkway, also a highway commissioner of Huntington. Mr. Hecksher's theme embraced the wonderful progress in transportation during the past year, notably the building of the East river bridges and the completion of the tunnel all the way from city hall, New York, to Jamaica. He characterized the parkway as an innovation, which would prove almost as valuable to Long Island and New York as the bridges and tunnels themselves.

Milton L. Ecluse, director of the Long Island Real Estate Exchange, dwelt on the great benefits the parkway would bring to Long Island in the way of attracting not only visitors by permanent residents along its line.

John C. Wetmore, speaking for the New York press, congratulated motoring and Long Island that their dream was at last to come true and prophesied that some day the fraternity and Long Islanders would erect a monument on the parkway to its promoters, and that high up on it would be the names of Vanderbilt and Pardington.

The speechmaking was brought to a close by Russell A. Field, secretary of the Long Island Automobile Club, who spoke eloquently of the interest of the club in the parkway, and concluded with a glowing tribute of congratulation to the directors that they had secured one of their members, A. R. Pardington, to manage the enterprise.

Then once more expressing his regret that the one who should rightly have had the honor was absent, Mr. Pardington drove a nickeled spade deep into the sod, the band played, the crowd cheered, and the parkway was started. A rush of carts and laborers within the roped enclosure followed. Picks swung, shovels waved, and a Niagara of dirt fell into the wagons. A loud explosion of dynamite, a cloud of dirt and chips, and a tree had been blown from the parkway's path. Following all this both motorists and Long Islanders repaired to the engineers' shed and partook of the company's hospitality.

The place of beginning is about the center of an 11-mile stretch, whose completion is guaranteed by contract, in October, in ample time for practice for the Vanderbilt cup race on October 24.

STURDY MEN FROM ITALY BEGIN ACTUAL WORK

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MOTOR AGE

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DO WE LIVE 210 YEARS?

HAS the expanse of human life been extended from the allotted 3 score and 10 years to three times 3 score and 10 by the motor car? Have the possibilities of accomplishment in life been increased threefold—not by reason of tripling the actual years of our existence, but by reducing the time required to do this work? A careful analysis of the transportation conditions, as ushered in by the motor car, shows the vast time-devouring capacity of this latest locomotion invention; not only in the actual decimation of time needed in going from place to place, but also in the years actually added to life by the outdoor customs offered by the motor car, does this increasing of our usefulness appear.

A few specific examples will serve to explain this: The American tourist in Europe has but 1 month in which to gain his first impressions of England or France or Italy. With the motor car a good general idea of Scotland, France or Italy can be obtained in 2 weeks. In these places the car can cover 150 or 200 miles a day. Had the tourist to do this with horse vehicles his daily zone of sight-seeing would be limited to 50-mile trips—just one-quarter that possible with the motor car. Should the tourist select railroad trains, he or she is "cooped" in the compartment with the view very much limited and the interior atmosphere not at all the best. From the railroad coach the best of the country is never seen and, in general, railroad tracks are found in the poorest parts of cities. While the railroad is faster than the motor car, the time so spent poorly repays the tourist in comparison with the hours consumed on the same course in a motor car. Ten trips from New York to Chicago by train will not be so productive from an information point of view as one made in a motor car. In the motor car you look at the front doors of homes, you see the people face to face; in the railroad coach, you rarely see representative crowds around a depot, and your knowledge of homes comes from observations of the back yard.

The car owner in a large city sees his friends in the city and in neighboring cities and towns three or more times as often as he would without a car. Chicago and New York have citizens who have approached and perhaps passed the 3 score and 10 boundary without knowing the confines of their native city. The tourist of 2 days can know more of the streets, buildings and parks of a city than the oldest inhabitant who has driven the horse for 3 decades. The motor car has made it possible to annihilate distance, thereby adding to the experiences of life.

What the private motor car is to its owner, the sight-seeing wagon is in a measure to the great masses, and the taxicab to the well-to-do middle classes. With these approved means of locomotion the park is brought to the front door of the apartment house, the golf links is brought to the front gate of the home and the country afternoon by the lakeside is a possibility easier than was an afternoon's shopping 10 years ago.

"Know thy land" is the secret of true deep-founded patriotism, and how can your native land be known without seeing it? Seeing calls for means of locomotion, and within the expanse of time evolution has worked wonders from the old Egyptian methods to the big car of today. To walk from Chicago to New York is a task of months; to drive with horses is a 40-day pilgrimage, and to go with a car is an outing of 1 or 2 weeks, according to the demands upon the time of the traveler. The many tours and contests of the past few years have shown the people the beauties of the country, have installed in them a national or state spirit of patriotism and incidentally administered to the many other phases of life.

In the daily grind of life the motor ambulance cuts the time between the scene of the accident and the hospital; the doctor's car reduces the time between the call and his visit to the patient; the pleasure car carries the merchant to work as speedily as does the street car; and in a score of other vocations the ministering work of the car is exemplified: all tending to increase our life work, and adding to health and pleasure of the people.

ROUGH GOING IN CUBA

ONE VIEW ON RACING "WAR"

CONCISELY put, going directly to the meat of the argument, and presenting the views of a man interested in motoring since its American conception, no better editorial view of the so-called "war" for the control of racing could be written than the following communication from one who confesses frankly it is written to ease his mind:

Editor Motor Age—The issue is now clearly defined, and, as I see it, it is the American manufacturer and the A. A. A. against the foreign maker and the A. C. A. The feeling among the foreign manufacturers toward their American competitors has progressed from contempt to respect, and from respect to fear. The foreigners realize that their "goose" which has been laying the "golden eggs" is in *extremis* and nearly cooked. The fact that all those having agencies in this country are advertising "bargain prices" and the falling off in value of importations this year of almost 50 per cent, as shown by the customs house returns, tells the story in plain language, and indicates that the American public has finally awakened to the fact that the American manufacturers are now making as good, yes better, cars for American conditions than the foreigner.

The knell of the "importer" is sounded, and the spectacle of a metropolitan club, which is frankly striving for recognition as a national body, permitting itself to be used by the foreigners to bolster up their losing game is pitiable and offensive to every true American, who is patriotically wishing and working for the success of the American manufacturers. The American manufacturers are big enough and strong enough to decline to submit further to the dictation of the foreign clubs, which are merely the manikins of a select few of the foreign manufacturers, who have not hesitated to so frame their rules as to secure for themselves every advantage. The Automobile Club of France killed the Gordon Bennett for the sole reason that it held the French manufacturers down to an equal chance for success with the rest of the world, and instituted a race that would permit their entries to greatly outnumber the other entrants and so increase their chances of success.

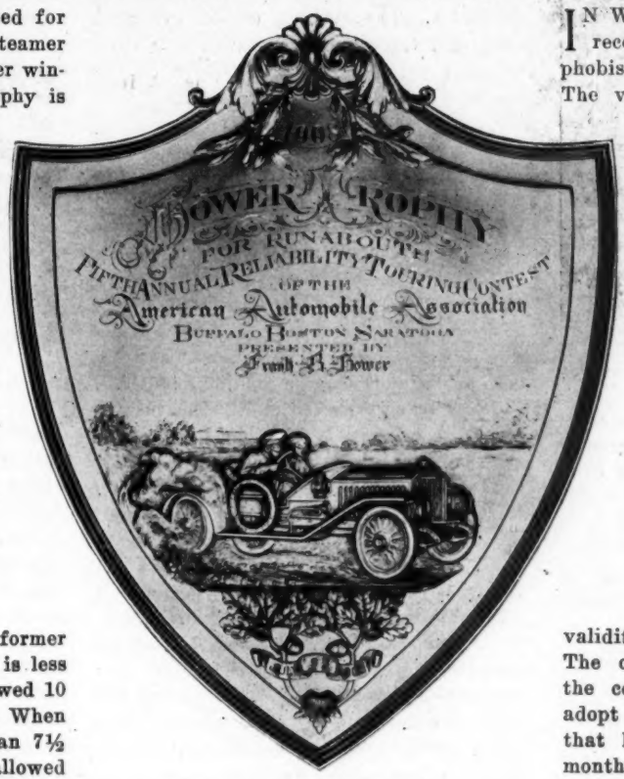
The cause for the manifest unfairness of some writers for the daily press can be clearly traced, and most of them are doing their papers an injustice which will surely react on their business management when the American manufacturers, who are their best advertisers, begin to ask some pointed questions. It may be that the business managers will wake up before these questions are asked, and forestall the necessity of replying to such embarrassing inquiries.

The Vanderbilt cup race will surely be held, and the foreign manufacturers, who still hope to market a part of their production in this country, cannot afford to withhold their entries, although they may adopt the plan of entries by individuals to "beat the devil around the stump," and I confidently predict that the Vanderbilt cup race will have more entries of foreign cars than the A. C. A. "grand prize" road race, if it is ever held. Vive la Vanderbilt cup.—Frank G. Webb.

Mr. Webb is a representative type of the American sportsman who lends his aid to a pastime purely from the love of it. For years he has served the Long Island Automobile Club in various capacities, was instrumental in its organization, and was a factor in the formation of a national body. Early in the progress of motoring he objected to a single club "lording" it over the other clubs. His views will find favor among those who think one's own country should come first in a man's estimation.

CURRENT COMMENT

ALTHOUGH it has been contested for only once, when the White steamer and Stoddard-Dayton tied, the former winning in the run-off, the Hower trophy is deservedly growing in popularity and this year it will be coveted almost as much as the Glidden trophy itself. Definite reports and statements made of intentions to enter a runabout for the Hower indicate that there will be more than twice as many competitors for this runabout prize next month as there were last summer. The Hower trophy will be competed for under the same rules as the Glidden trophy, with a point system of scoring and each runabout must carry an observer, the same as the touring cars. The runabouts will be divided into two classes, cars valued at less than $1,500 and cars valued at more than that. The latter will form class A and the former class B. When the day's schedule is less than 7½ hours, class B will be allowed 10 minutes more time than class A. When the day's schedule allows more than 7½ hours, class B runabouts will be allowed 15 minutes more. In event of there being a tie between the runabouts at the end of the regular tour, there will be no lengthy run required to settle it. The conditions for running off the tie are such that one extra day is pretty certain to decide which is the winner. The Hower trophy this year marks a departure, and one which is being generally commended. Instead of being a cup, the trophy is a handsome silver shield, with convex surface that stands in relief against a rosewood board. The shield is a heavy one, of pure silver,



THE 1908 HOWER TROPHY

handsomely chased and engraved, with a runabout containing two men, shown in the lower part, against a background of fields, while on the upper part is the inscription: "1908, Hower Trophy, for Runabouts, Fifth Annual Reliability Touring Contest of the American Automobile Association, Buffalo-Boston-Saratoga. Presented by Frank B. Hower." This new Hower trophy is on exhibition in New York and looks attractive to prospective entrants.

IN Wisconsin and in Ohio there are two recent cases that show that the motor-phobistic fever still rages in some places. The village council of Lindsay, O., has passed a new speed ordinance, limiting the speed of motor cars and all other vehicles to 5 miles an hour inside the limits of the municipality. A curfew ordinance also has been passed by the city fathers, and in order to make sure that these and other restrictive measures are obeyed to the letter, five deputy marshals have been added to the list of officials with orders to apprehend all violators. As their remuneration for services will be limited to the customary fees attending prosecutions it is assumed they will be on the alert. Those who have taken the pains to examine the state law passed by the recent legislature seriously question the validity of the new "speed" ordinance. The other case is in Wisconsin where the common council of Milwaukee will adopt the rules-of-the-road ordinance that has been hanging fire for several months, unmindful of the objections raised by the Milwaukee Automobile Club. The ordinance permits street cars to run up to 40 miles an hour, their speed limit, while motorists must keep within 10 miles an hour in the business district and 12 miles in the outskirts. James T. Drought, secretary of the M. A. C., objected vigorously to this discrimination and brought down the wrath of the police chief on his head. Of course, motorists do not wish to travel at 40 miles an hour, but they believe street cars are far more dangerous at such a speed as motor cars at a reasonable rate.

SCHEDULE OF MOTORING EVENTS THAT WILL BE CONTESTED THIS YEAR

International Trials — Royal Automobile Club of England, 2,000 miles international trials, June 1-18.

Prince Henry Tour—Prince Henry cup tour in Germany, June 9-17.

Chicago Roadability Test—Chicago Automobile Club's roadability test to Gary, Ind., June 13.

Cleveland Hill-Climb—Annual hill-climb of Cleveland Automobile Club, June 13.

Meet at Point Breeze—Track races of Quaker City Motor Club, of Philadelphia, at Point Breeze track, June 13.

Scottish Reliability—Annual Scottish reliability run, June 15-19.

Readville Races—Postponed Decoration Day track races at Readville, Mass., June 17.

Georgian Test—Sealed-bonnet and reliability run at Atlanta, Ga., June 18 and 19.

Milwaukee Hill-Climb — Annual hill-climb of Milwaukee Automobile Club at Milwaukee, Wis., June 20.

Albany's Annual Run—Annual 5-day tour of Albany Automobile Club, Albany, N. Y., June 20-26.

Milwaukee Reliability — Four-hundred-mile reliability run of Milwaukee Automobile Club, June 22-27.

One Thousand - Mile Reliability — Chicago Motor Club's 1,000-mile, 250 miles a day, reliability run, scheduled for June 24, 25, 26 and 27.

Monroe County Carnival—Four-day carnival of the Monroe County Automobile Association of Pennsylvania, June 24-27.

Norristown Hill-Climb—Norristown Automobile Club's hill-climb at Norristown, Pa., June 27.

Owners' Reliability—Second annual owners' reliability run of Automobile Club of St. Louis, June 27.

Rockville Climb—Hill-climb of Automobile Club of Rockville at Rockville, Conn., June 30.

Wildwood Carnival—Annual motor carnival at Wildwood, N. J., including straightaway races, July 3-4.

Stock Chassis Race—Two hundred and fifty mile-stock chassis race at Lowell, Mass., July 4.

Hoosier Road Events—Indianapolis Automobile Club's road events at Indianapolis, July 4.

Glidden Tour—Start of annual A. A. A. tour from Buffalo Wednesday, July 9; good roads convention preceding it July 6, 7 and 8.

French Grand Prix—Third annual grand prix of Automobile Club of France, July 7-8.

Wisconsin Trophy Run—Milwaukee Automobile Club, Wisconsin trophy run, July 11-15.

St. Paul Races—Track meet at St. Paul, Minn., July 15.

Ardennes Races—Annual Ardennes and Liederkerke road races, July 20-30.

Chicago Hill-Climb—Third annual hill-climb of Chicago Motor Club at Algonquin, August 14.

Palace Show—Annual show of American Motor Car Manufacturers' Association in Grand Central palace, New York, December 31-January 7.

Garden Show—Ninth annual show of Association of Licensed Automobile Manufacturers, Madison Square garden, New York, January 16-23.

STEAMER BEATS DEAD HORSE HILL RECORD

BALDWIN IN THE STANLEY

WORCESTER, MASS., June 6—More than 20,000 spectators, a far greater number than ever before attracted to a motor event in this state, today saw a puff of steam and a streak of flying red as it flashed by, and L. F. N. Baldwin, of Providence, had bounded over the finish line on top of the famous Dead Horse hill course in :55⅗, completely smashing the previous record of 1:01⅖ for this mile-long straightaway hill-climb. All things considered, Baldwin's time was wonderful in every sense of the word. In the previous climbs here Baldwin never had a look-in against the gasoline speedsters, but today it was different. Baldwin came here prepared to win, and he won. The steam car arrived. Its nearest competitor was the Chadwick big six, the winner of the Wilkes-Barre climb. Willie Haupt drove that car up in :59, but it remained for Baldwin to first lower it to :57⅖ and an hour later to :55⅗, driving Fred Marriott's old Stanley steam racer aptly termed a woggle bug. If Baldwin could have let the car out and kept it on the course he might have negotiated the hill in :40, but he was obliged to to shut off his power six and seven times respectively in his two trials, else he would have climbed a bank, for the light car bobbed all over the course with its daring driver clinging to the wheel.

While Baldwin smashed the record made by Sammy Stevens in his big 90-horsepower Darracq in 1906, the :59 trial of the Chadwick will stand as the best time yet made on the hill by a gasoline car.

The course, in covering which an altitude of 320 feet is attained, was in perfect condition, the result of over 2 weeks' work by a large gang of men under the direction of the club officers. The course was dressed this morning with calcium chlorine and the dust evil was completely done away. There were no accidents of any kind, due chiefly to the fact that the course was closed to all traffic during the running off of the event. The entrance was fenced off and fences were erected alongside the course. Police in large numbers kept the spectators back of the fence and the only one time one strayed out caused Willie Haupt to spoil what had the earmarks of a record performance in the Chadwick. The fencing off of the road permitted the Worcester Automobile Club to make a big success financially of the climb, which has not been the case with the organization in other years.

For general all-round honors the Thomas-Detroit cars made a great sweep, cleaning up four first prizes, three second and two thirds. Stevens-Duryea cars ran away with two of the events in which they were entered. These were captured by the little six. The big six was protested, which handicapped the company, as this car has won numerous events elsewhere, competing both at Fort George and Wilkes-Barre, and much was expected of it. The protest was because of its body. The Peerless car got two firsts and two seconds. The Maxwell showed its power again when it won first place among the runabouts of small caliber and second in the medium-priced class. A Jackson won the only event in which it was entered. The Berliet did creditable work and so did the Ford, Marmon, Stearns, Corbin, Knox, American roadster and Cameron. In the motor cyle eventsthe Indians got the honors, being the only entrants; but they made splendid time.

The events were handled admirably, and

HAUPT IN THE CHADWICK

there were no delays. Not an accident was reported throughout the trials. Everything went along like clockwork and the first machine started nearly on time at 1:30 p. m., and the last car had climbed the hill about 5 p. m. It was an admirable day for the climb. The hill was in better shape than ever, too, for it had been treated with a preparation of calcium that kept down the dust all the way to the top.

The first class to be started was the high-powered gasoline cars and only two went in, a Peerless driven by J. B. Mc-

TABLE SHOWING RESULTS IN ANNUAL CLIMB OF THE WORCESTER

NO. 1—GASOLINE CARS, 60.1 TO 75 H. P.

No.		H. P.	Cyl. bore	Piston stroke	Driver	Time
7	Thomas-Detroit	40	5	4¾	L. Lorimer	1:15
8	Peerless	57	4⅞	5½	J. B. McKinney	1:15¾

NO. 2—GASOLINE CARS, 40.1 TO 60 H. P.

8	Peerless	57	4⅞	5½	J. B. McKinney	1:16
38	Stearns	60	5⅜	5⅞	Morgan Kent	1:16 2-5
7	Thomas-Detroit	40	5	4¾	Oliver Light	1:16 3-5
6	Thomas-Detroit	40	5	4¾	L. Lorimer	1:20 2-5

NO. 3—GASOLINE CARS, 24.1 TO 40 H. P.

4	Stevens-Duryea	35	3⅞	4¾	L. H. Hancock	1:15
7	Thomas-Detroit	40	5	4¾	L. Lorimer	1:17
6	Thomas-Detroit	40	5	4¾	Oliver Light	1:20 2-5
1	Corbin	32.4	4½	4¼	John Dower	1:20 2-5
3	Corbin	32.4	4½	4¼	James Corbett	1:20 4-5
28	Knox	30.6	4⅝	4¾	William Bourque	1:23 2-5
17	Marmon	40	6	5	F. E. Wing	1:42
16	Marmon	40	6	5	J. E. Hines	1:49 1-5
15	Wayne	32	4½	5¼	Fred Allen	2:00 2-5
20	Stoddard-Dayton	35	4¾	5	John Miller....Withdrawn;	accident

NO. 4—GASOLINE CARS, 15.1 TO 24 H. P.

9	Buick	22	3¾	3¾	C. M. Stanley	1:49
12	Overland	22	3½	4½	J. E. Pugh	2:42 4-5

NO. 5A—FREE-FOR-ALL, AMATEURS, STOCK GASOLINE CARS ONLY

6	Thomas-Detroit	40	5	4¾	J. S. Harrington	1:18 2-5
8	Peerless	57	4⅞	5½	J. L. Snow	1:18 4-5
17	Marmon	40	5	5	F. E. Wing	1:53
38	Stearns	60	5⅜	5⅞	Morgan Kent	2:31

NO. 6—MOTOR CYCLES, PROFESSIONALS

35	Indian	5			C. F. Hoyt	1:04 2-5
†34	Indian	5			Herbert Clark	1:29
32	Indian	5			Howard Clark	1:31
33	Indian	4			E. W. Allen	1:51 2-5

†Given second trial because of broken chain.

NO. 7—CARS OF ALL TYPES AND MOTIVE POWER

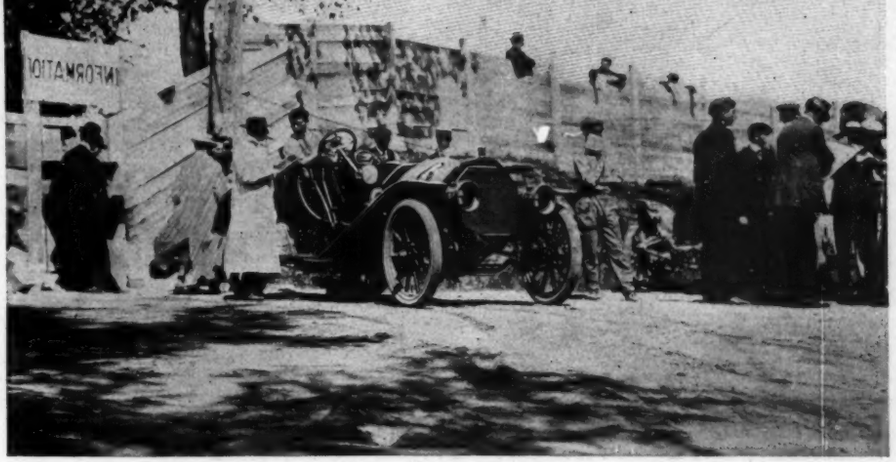
21	Stanley	30	4½	6½	L. F. Baldwin	:57 2-5
14	Chadwick	60	5	6	William Haupt	:59
27	Berliet	54	4¾	5½	H. F. Grout	1:03 1-5
5	Stevens-Duryea	50	4¾	5¼	P. J. Robinson	1:06 3-5
36	Mercedes	90	6½		Charles Basley	1:07
24	Columbia	28.9	4¼	4½	J. J. Coffey	1:15
28	Knox	30.6	4⅝	4¾	Wm. Bourque	1:15
*2	Corbin	36.1	4½	4¼	John Dower	

*Punctured tire; did not try again.

Kinney and a Thomas-Detroit by Lorimer. The former was sent off first and with a roar he flew along and soon the time was flashed back, 1:15. That time seemed to be rather a stickler, for a number of cars made exactly the same time and others kept very close to it.

It was interesting to watch the cars as they rushed along. To watch them from the bottom one saw them fly down a slight grade to the starting line as if they were shooting the chutes, for there was a little dip at the start. Then they struck the first grade and tilted upward at an angle. From then on it was a series of rises, like humps on a dromedary's back. The five different events that were run off first only whetted the appetites of the spectators, who were waiting for the free-for-all, in which the stars were entered. Everyone was on edge when the word was given that the first car was about to start. This was Haupt in the Chadwick. With a rumble and a roar that re-echoed over the hills as if a battery of rapid-firing guns had been sent into action, the car leaped down the dip and then up, the driver bouncing in his seat like the tongue of a dinner bell wagged furiously by a maid summoning the help. Everyone felt the record was wasting away, and sure enough it was, for the car made it in :59.

Baldwin's turn followed. Compared with the big gasoline machine it seemed a toy. The former was a light drab and like a battleship in war time was stripped so its palpitating engines could be seen throbbing as it drew its driver up the hill. The steamer was a long, lithe red machine and it shot down with hardly any noise until it crossed the start, when like a bird it seemed to take wings and was lost in a smother of steam that whistled a lively tune on being released from the tremendous pressure.



THOMAS-DETROIT, ONE OF THE STARS OF THE CLIMB, COMES OUT OF ENCLOSURE

No one doubted but what it was going to make its mark and it clipped more than a second off that of its predecessor. That added to the interest when it started later on its exhibition mile, and it was the same story—leaping and swaying on the hill, the road slipping under its wheels like a flood mill race until like a shot out of a gun it popped over the top and passed the spectators in :55⅗.

H. B. Larzelere, owner of the Chadwick, was much impressed with the course. He said it was the finest in his opinion in America for the real hill-climbing test that could be given a car. He thinks the club ought to make the course two or three times as wide as it now is, and then there would be here a hill course unequaled in the country. So great was the success of today's affair the club has decided to repeat it next October.

In the exhibition event against Baldwin Larzelere offered Haupt a couple of hundred dollars pocket money if he could pull down the record for a gasoline car, but Haupt's chances were spoiled when a spectator strayed onto the course and he had to shut off to prevent hitting him. The speed at which he was traveling can be imagined when he covered the course, even after this disconcerting incident, in :59⅘. Haupt also had another piece of hard luck in losing his pocket book.

For a piece of strenuosity seldom equaled F. Dewey Everett, a young Worcester boy still in his teens, deserves a medal. On Friday afternoon he decided to enter the climb. He came to Worcester on a late night train, arriving here at 1 o'clock in the morning. He slept 2½ hours and at 3:30 o'clock this morning repaired to the hill. He climbed it twice in his Stanley, never having been over it before. In the morning he went to Cambridge, for he is a freshman at Harvard and coxswain of the eight-oared crew. He drove there in his car and put his crew through its paces. Jumping into his car once more he drove back the 48 miles to Worcester and arrived in time to go in the Worcester county amateur championship event.

AUTOMOBILE CLUB UP DEAD HORSE HILL, NEAR WORCESTER, MASS.

NO. 8—GASOLINE STOCK CARS, $850 OR LESS

19—Maxwell	14	4½	4	Wright Pollard	2:13
25—Ford	18	3¾	3½	H. E. Rogers	2:15

NO. 9—AMATEUR EVENT, OWNERS TO DRIVE, WORCESTER COUNTY CHAMPIONSHIP

11—Stanley	20	3⅝	5	F. D. Everett	1:16
6—Thomas-Detroit	40	5	4¾	J. S. Harrington	1:16 4-5

NO. 10—GASOLINE STOCK CARS SELLING FROM $851 TO $1,250

9—Buick	22	3¾	3¾	C. M. Stanley	1:40 2-5
30—Cameron	21	3⅝	3½	F. F. Cameron	1:45 2-5

NO. 11—GASOLINE CARS SELLING FROM $1,251 TO $2,000

31—Jackson	35	4½	4½	E. P. Blake	1:53
18—Maxwell	24	4¼	4¼	L. S. Tyler	2:06
26—Selden	28	4¼	4½	A. R. Miles	2:32

NO. 12—FREE-FOR-ALL, STOCK GASOLINE CARS ONLY

6—Thomas-Detroit	40	5	4¾	L. Lorimer	1:17 1-5
1—Corbin	32.4	4½	4½	John Dower	1:19 1-5

NO. 13—FOR GASOLINE CARS SELLING FROM $2,001 TO $3,000

7—Thomas-Detroit	40	5	4¾	L. Lorimer	1:15
6—Thomas-Detroit	40	5	4¾	Oliver Light	1:16 1-5
28—Knox	30.6	4⅜	4¾	William Bourque	1:20 1-5
3—Corbin	32.4	4½	4¼	James Corbett	1:22
1—Corbin	32.4	4½	4¼	John Dower	1:22 1-5

NO. 14—GASOLINE CARS FROM $3,001 TO $4,000

4—Stevens-Duryea	36.1	3⅞	4¾	L. H. Hancock	1:15
29—American roadster	44.1	5¾	5½	Arthur J. Andrews	1:19 3-5
17—Marmon	40	5	5	F. E. Wing	1:41 1-5
16—Marmon	40	5	5	J. E. Hines	1:49 1-5

NO. 15—GASOLINE CARS FROM $4,001 AND OVER

8—Peerless	57	4⅞	5½	J. B. McKinney	1:16 1-5

NO. 16—OPEN TO EVERY TYPE, RECORD TRIAL

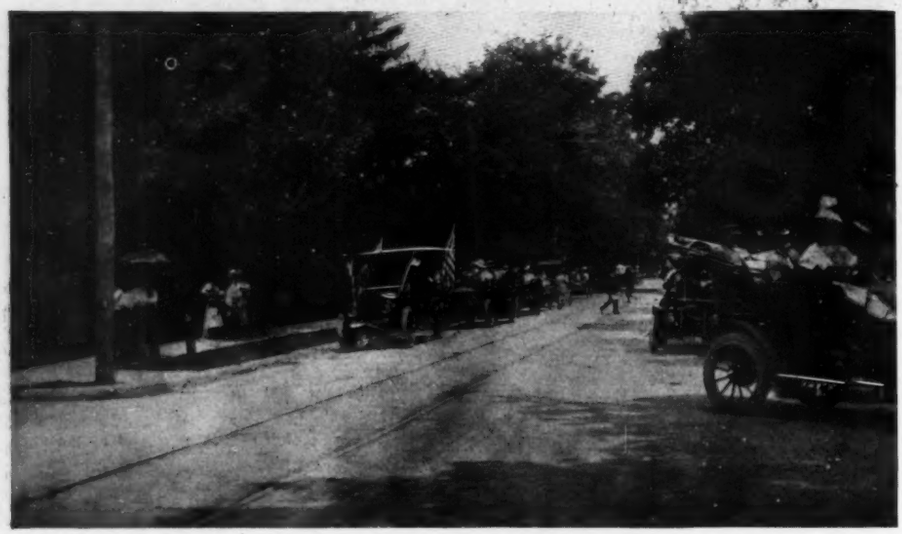
14—Chadwick	60	5	6	William Haupt	1:00
27—Berliet	54	4¾	5½	H. F. Grout	1:03 3-5
36—Mercedes	90	6½		Charles Basley	1:04 1-5
5—Stevens-Duryea	50.1	4¾	5¼	P. J. Robinson	1:05 2-5
2—Corbin	36	4½	4¼	John Dower	1:10 2-5

SPECIAL EXHIBITION EVENT, OPEN TO ALL

21—Stanley	30	3½	5	L. F. Baldwin	:55 3-5
14—Chadwick	60	5	6	William Haupt	:55 3-5
27—Berliet	54	4¾	5½	H. F. Grout	1:02 2-5
22—Stanley	30	3½	5	F. Marriott	1:19 2-5

Stevens-Duryea Big Six protested in Nos. 2, 12, 15 events.

HOOSIER FARMERS ENJOY MOTORING SPORT



CARS LINED UP FOR CRAWFORDSVILLE PARADE

CRAWFORDSVILLE, IND., June 5—The day is not so far in the past that Hoosier farmers were not noted for their friendliness to the motor cars and those who drove them. The farmer believed the whole road was his by divine right and logs and other near-death traps often blocked the road of the motor car driver. Yesterday, however, at the second annual motor day observed in this city under the auspices of the Crawfordsville Commercial Club, probably twenty-five of the 150 motor cars in the parade were driven by farmer owners. In addition to these it is estimated that 300 farmers and their families from Montgomery and surrounding counties were in the city to witness the various events and applaud them. One of the main reasons for promoting this annual celebration was to interest the farmers in motoring. The residents of Crawfordsville long have been converted and so enthused are they over the sport that they desire to let their rural neighbors into the good thing. The affair last year won over many and it is believed yesterday's celebration will complete the conquest. Certain it is, the farmers were most prominent today and they appeared to thoroughly enjoy themselves. The trade, too, was well represented, coming from neighboring cities, and it is believed many cars will be sold in the rural districts as a direct result of this big event.

With one possible exception, the program yesterday was the largest motor demonstration ever held in Indiana. Visiting drivers from Indianapolis, Lafayette, Kokomo, South Bend and from smaller cities flocked to Crawfordsville by hundreds. Kokomo, more than 100 miles away, sent a delegation of fifteen motor cars filled with members of the Kokomo Automobile Club and their friends. Practically all of the Indianapolis factories and some of the dealers were represented.

While the parade was one of the largest ever seen in the state, there was considerable disappointment because the motor cars were not decorated as elaborately as they were in last year's event. Beyond a few flags and some bunting the machines were not decorated. Last year's parade included a number of cars decorated in decidedly original and attractive styles. Twenty-eight Haynes cars were in the lineup today.

There were not many entries in the various events, but they were nevertheless, interesting, and in some instances exciting. For instance, there were only three entries in the first event of the hill-climbing contest, and only two in the second event. Other events contained more. Edgar Apperson, of Kokomo, drove his four-cylinder Jackrabbit to Crawfordsville, and walked away with first prizes in two events. After that a committee waited on him and asked him not to enter any more contests as others realized they could do nothing with him in the running. However, Apperson declined, winning one more event before the day was over.

The Commercial Club appropriated $200 in prizes for winners of the various events, but in view of the fact that no apparent effort had been made in the parade to decorate the cars, no prizes were awarded in that event. All other prizes were paid in gold. The hill-climbing contest was held during the morning on Bluff hill, just west of the city. The hill is about ¼ mile long and has about a 10 per cent grade. There were two events, the first for four and six-cylinder cars and the second for one or two-cylinder rigs. Apperson, driving his four-cylinder Jackrabbit, climbed the hill in 0:23¼, Ed. Hack, of Crawfordsville, driving a Ford, finishing second. Two Auburns, driven by Ernest Phillips, of Crawfordsville, and W. W. Beeson, of Finch & Freeman, Indianapolis, respectively, were the only entries in the second event, Phillips finishing first in :40. The summary of the other events was as follows:

Egg race—Edgar Apperson, Kokomo, Apperson Jackrabbit, won; T. K. McCune, Indianapolis, Auburn, second; P. D. Stubbs, Indianapolis, Overland, third. Best time, two blocks, :26¼.

Best man driver—Frank Sweigert, Kokomo, Buick.

Best woman driver—Miss Agnes Davis, Kokomo, Haynes.

Largest car in parade—Rapid Pullman, entered by Indianapolis Motor Car Co., Indianapolis.

Smallest car in parade—Olds runabout, driven by Dr. Tilney, Crawfordsville.

Car carrying largest load in parade—Rapid Pullman, entered by Indianapolis Motor Car Co., Indianapolis, carrying forty-three passengers.

Obstacle race—Frank Sweigert, Kokomo, Buick.

Four-block sprint for one or two-cylinder cars—Ernest Phillips, Crawfordsville, first. Time, :40.

Four-block sprint for four or six-cylinder cars—Edgar Apperson, Kokomo, Apperson, first. Time, :27¼.

The committee having charge of the program was as follows: T. B. Nicholson, chairman; R. D. Irwin, D. M. Peck, J. A. Oswald, Tillie Albright and Mace Townsley. F. M. Cayou was official starter and George Steele, J. A. Oswald, and Dr. W. T. Gott, timers. Robley D. Irwin was marshal.

SEATTLE HAS A MEET

Seattle, Wash., June 1—The local Memorial day track meet was marked by a series of accidents which spoiled what otherwise would have been a good set of races. Seven events were carded, the first being a 100-mile match race for $1,500 a side between C. M. Stimson's Packard and H. L. Hillman's Stearns. In this the Packard's mechanic, J. P. Keena, fell off in the fifth mile and when Driver Welte looked back his car skidded into a fence, throwing him also. This left the Stearns with a walkover and it finished in 2:15:06⅘, its fastest mile being in the ninth, when it did 1:02. The second race was for touring cars or runabouts listing at $1,000 and under, the Mitchell, driven by Jack Winn, being victor over the Ford, Reo, Rambler and Eureka. Its time was 4:21. In the $1,500-$3,000 roadster class G. D. Gableson's Oldsmobile defeated the Ford six, driven by E. W. Disher, formerly of Chicago, in 6:20. The Franklin and Studebaker were beaten by a Peerless in a pursuit race, the event lasting 6½ miles, the time being 7:10. In a match race between an Oldsmooile and a Packard the latter won in 6:10, the distance being 5 miles. A Franklin six won the class for cars over $2,500, defeating a Franklin four and a Pope. H. H. Grant was the driver and his time for the 5 miles was 6:21. The 50-mile race was not finished because of a serious accident. Roy Rossman, driving a stripped Franklin, skidded into a fence in the third mile. He came back on the track, looked around, fearing another car was approaching, and hit the fence again. This time his car turned turtle and Rossman was severely injured.

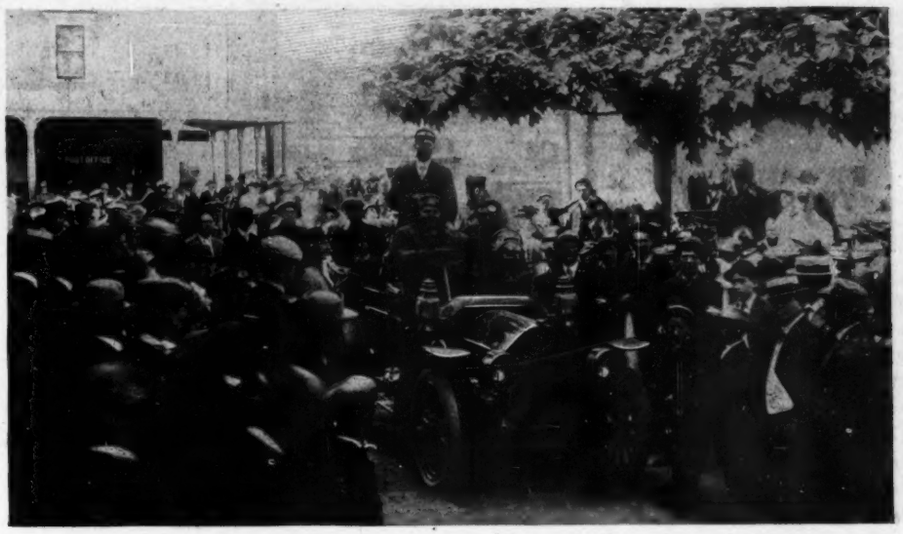
COAST PROMOTES SUCCESSFUL 24-HOUR RUN

SAN FRANCISCO, CAL., June 4—The first 24-hour endurance contest ever held in California which took place last Saturday and Sunday excited a great deal of interest, not alone among the dealers, but also among the general public, thousands of whom gathered along the course to watch the cars as they flashed by. The event, which was reported briefly in the previous issue of Motor Age, probably will be made an annual event by the Automobile Dealers' Association, under whose management it was given. Sixteen cars were entered and fifteen started. Curiously enough, the car that failed to come to the mark, a big Matheson, was No. 13 in the entry list and would have started with the hoodoo handicap which the dealer perhaps regarded as too great. Of the fifteen cars that took the starter's flag, nine finished with perfect scores, as follows: Peerless touring car, Studebaker touring car, Pope-Hartford touring car, Stoddard-Dayton roadster, Mitchell touring car, Mitchell runabout, Buick runabout, Tourist touring car, Autocar runabout.

A Franklin touring car of the small type lost a perfect score because, through the carelessness of the driver or others in charge of the car, it started out from the control without sufficient gasoline to carry it around the course. Otherwise its work was perfect, the car crossing the line exactly on time. A Cadillac had some small trouble with its commutator which required just 1 minute to repair when it was finally found, but this cost it a penalization. A Rambler roadster and a California Tourist roadster went out without completing a lap, while a York Pullman touring car and a Reo touring car were withdrawn in the third lap.

The contest was held in Alameda county, just across the bay from San Francisco, with the main control at San Leandro. From that point the route led down the foothills toward San Jose some 20 odd miles and then back again to San Leandro, the shape of the course being triangular. Each circuit was approximately 47½ miles in length, and twelve circuits were made in the 24 hours, giving a total distance covered of 570 miles. Each circuit was scheduled by the committee to require about 2 hours, but the rules required that six circuits be made in 12 hours and twelve circuits in exactly 24 hours. To allow for a variation of watches, 3 minutes' leeway on either side of the twelfth hour and the twenty-fourth hour was allowed, cars coming within that mark being given a perfect score.

The cars were required to start from San Leandro and make the circuit without stopping their engine and without making any adjustment. The cars were to continue in motion, too, during the entire circuit with the single exception of a stop at Warm Springs, at the far end of the run, where they received a card certifying arrival. During the stop at Warm Springs the motor was kept running. In general, the motor could be stopped only at the control at San Leandro, where oil, gasoline and water were taken on, if desired, at the end of every circuit. During the progress of tire repair on the road, also, the motor could be stopped. Observers appointed by rival dealers were placed upon the cars to see that all the rules of the contest were rigidly enforced.



FINISH OF STUDEBAKER IN 24-HOUR ENDURANCE RUN

The course through Alameda county foothills is one of the finest and prettiest that could be found in the state. It skirts the foot of the coast range of mountains, through a fruit-growing country. The county keeps its roads generally in beautiful shape, and for miles at a stretch they might be called boulevards. Some parts of the circuit, however, gave a little rough riding, and there were a couple of awkward hills and some railroad crossings that were nasty things to negotiate during the darkness of the night. Under the circumstances, the large number of perfect scores was a surprise. Before the contest it was considered doubtful whether a single car would be able to hold up under the constant grind for the full 24 hours. Even the dealers themselves were skeptical, and many believed the list of perfect scores would be very brief. The generally remarkable performances, therefore, were a big surprise.

Probably the most remarkable work of the day was done by the Studebaker touring car, driven by J. H. Eagal, manager of the motor car department of Studebaker Brothers of California. No advantage was taken of the privilege of stopping the motor while the car was in control, and for the entire 24 hours the engine sang merrily along without a miss. The car crossed the line at the twelfth and twenty-fourth hours on the minute, and then, for 2 hours more, the motor went along while the Studebaker people debated whether they should start right out for a run of 500 miles to Los Angeles without a rest. Weariness, however, was stronger than their ambition.

RESULTS IN 24-HOUR ENDURANCE RUN IN CALIFORNIA

Name of Car	Driver	Penalty	Notes
Mitchell	E. L. Peacock A. E. Hunter		Perfect
Buick	Frank Murray C. S. Howard		Perfect
Peerless	Max Rosenfeld		Perfect
Stoddard-Dayton	H. E. Anthony		Perfect
Reo	F. J. Wiseman	Out in 3d lap	Feed pump out of order
Franklin	E. Callender M. Cunningham	Disqualified	Took gasoline out of control
Pope-Hartford	R. G. Fowler L. Travers		Perfect
Studebaker	J. H. Eagal		Perfect
Pullman	F. O. Renstrom G. Renstrom	Out in 3d lap	Carbureter trouble
Mitchell	E. S. Martin J. Skinner		Perfect
Tourist	Ray McDonald Ed Mason		Perfect
Tourist	Gus Boquet	Out in 1st lap	
Matheson			Did not start
Rambler	D. E. Whitman	Out in 1st lap	Feed pump out of order
Cadillac	R. Rathbone	36 pts	Commutator trouble
Autocar	E. E. Bodge W. C. Morris		Perfect

OLDSMOBILE WINS RUN-OFF AT KANSAS CITY

STUDEBAKER PRESS CAR GIVES RIGHT OF WAY TO THE CORBIN

BALKY HORSE MAKES ONE OF CONTESTING CARS COME TO A STOP

KANSAS CITY, MO., June 8.—With seals on engine hood still unbroken, the Oldsmobile, which won the gruelling run of the Kansas City Automobile Club last Saturday, was being used for demonstration today. Throughout the entire run of 201 miles, the car was not touched except for breaking the radiator seal and filling with water. The tires were not touched. Penalties on this car were 110 points for being late at controls, 25 points for broken seal and 25 points for the rear axle being out of line. The axle was sprung just $\frac{1}{16}$ of an inch. Carl J. Simons of the Palace Auto Co., who drove the winner, would have made even a better score had he not come to the aid of a rival and thereby lost 15 minutes. The Pope-Hartford ran out of gasoline when 5 miles past Richland and telephoned for the first car to bring fuel. Simons, although his rig is said not to have been the first, waited until the gas could be secured from a grocery store and then carried it to the stranded Pope. When the news was related at the noon control at Overbrook, the crews waiting their turn to check out gave Simons a rousing cheer. His victory, in view of his steady running and his aid to the Pope, is decidedly popular.

Second place went to a Stevens-Duryea ligth six, driven by J. F. D. Moriarity, which finished with 795 points. It was penalized for a flat spring and broken rear fenders, in addition to being late at controls. Not a car made the schedule and not fewer than 100 points and in many cases much more of the total penalty was assessed for that reason.

Third place, to the surprise of many, but not at all remarkable to those who followed the car's steady plodding mile after mile, went to W. S. Hathaway's Maxwell D, the lowest-powered gasoline car in the run. Penalties against this car were for a bent steering knuckle which had to be replaced on the road, a job, by the way, that was done in 38 minutes; for a broken radiator seal and for time. The Pope-Hartford was the only car not to break the radiator seal. It was penalized for time, broken seal on the hood and stopping the motor while waiting for gasoline. The other cars finished with scores far below these four, as shown on the detailed report, for reasons also there shown. The Oldsmobile and Maxwell alone escaped tire troubles. The other cars were less fortunate in this respect. The final decision was not reached until tonight.

As soon as the schedule of the hour was announced, it was plain to be seen that no perfect scores would be made in the run to decide the tie of fifteen cars, which finished with perfect scores May 16. At that time the route was 145 miles. The run off of the tie was at 201.7 miles, over worse roads. The schedule called for running time in excess of 22 miles an hour. It had rained for 3 weeks, nearly every day, in the territory to be traversed, the latest rain coming Friday night. All the route after the environs of the city were passed, was over mud roads and 20 miles was the maximum speed at which cars could be sent over, considering this speed as an average throughout the day. An hour and 47 minutes behind time was the best any car showed at the Kansas City checking station, while others were as much as 5 hours late.

So complex were the observers' reports, that the committee found itself unable to give out the scores Saturday night, making the promise that they might be ready by today.

Everywhere was mud. The most common sort was of a thick, doughy consistency, which quickly filled up tire chains and interfered with their efficiency. At places there was the soup variety, which splashed over the occupants of the cars. Then there were small sloughs filled with water, giving the shower bath effect. The going was hard, wearingly tiresome. This applies to practically all of the route followed by the contestants save about 40 miles. Of the latter stretch, about 25 miles was macadam and paved streets and the balance fair sand and dirt roads, some of them lately dragged. The route lay from Kansas City through Lawrence, Topeka, Ottawa and Olathe, all in Kansas and then back to Missouri by way of Martin City. It was in the form of a huge triangle, with the hypothenuse from Kansas City to Topeka, a distance of 81 miles. The noon stop at Overbrook was 109 miles, more than half the entire distance.

The morning broke cloudy, with promise and predictions of showers, but as the day wore on the sun dried the sand and made going there a trifle easier, although it did not help with the worst part of the mud. Between Lawrence and Topeka, along the Kaw river bottoms, the roads were frightful and the cars crept along for miles, skidding wide on the turns and changing gears almost incessantly to avoid spots worse even than the average of the bad road on the course.

Along this stretch much time was lost. While the Stevens No. 3 and the Pope-Hartford were on time in Lawrence, the former was 28 minutes and the latter 6 minutes late at Topeka. Over this road the Pope made the most remarkable run of its circuit. When it took W. G. Whitcomb, the pilot, from the Stevens when the latter was passed, beyond Lawrence, the Pope ran like a scared deer and was in front of the procession until 15 miles from Kansas City. There tire trouble delayed the Pope and it surrendered the pilot to the Stevens, which made the Kansas City

RESULTS IN RUN-OFF OF TIE IN KANSAS CITY CLUB'S TEST

No.	Car	H. P.	Cyl. Bore	Piston Stroke	Model	Driver	Penalty	Final Point
1	Thomas. Did not start.							
2	White runabout	30	...	...	08N	W. R. Leitch	795	205
3	Stevens-Duryea	35	...	...	08U	J. F. D. Moriarty	205	795
4	Oldsmobile	36	4⅝	4⅝	08M	Carl J. Simons	160	840
5	Stanley	20	...	...	08F	F. R. Sanborn	+1000	—000
6	Corbin	30	4½	4½	08K	Fletcher Cowherd, Jr.	Out at 47 miles	
7	Pope-Hartford	30	4⅛	5⅛	08M	H. Holzhauer	304	696
8	Maxwell	24	...	...	08D	Chas. Levendoske	230	770
9	Stevens-Duryea	35	...	...	08U	M. C. Nolan	825	175
10	Studebaker	28	4⅛	5⅛	08M	W. M. Goodrich	988	12

NOTES: No. 2—Vaporizer replaced, boiler feed stopped up, breaking seal, damaged wheel and fender, time, engine stop. No. 3—Broken radiator seal, both rear fenders broken, one rear spring flat, time. No. 4—Broken radiator seal, rear axle sprung, time. No. 5—Fusible plug blown out, stop for gasoline, time. No. 6—Dropped out at Lawrence, time. No. 7—Bonnet seal broken, damaged fender, time. No. 8—Bent steering knuckle replaced, radiator seal broken, front axle spring, time. No. 9—Ignition adjustments, broken seals on coil, hood and oil (3 in all), motor dead 52 minutes, fan belt repaired, one rear spring flat, front fender loose, time. No. 10—Missing motor, pump attached to force gas to carbureter, loose spokes in rear wheel, replaced spark plugs, broken radiator seal, time. Time means late at controls. Each car started with a credit of 1,000 points.

control a scant minute earlier than the Pope and the Oldsmobile.

The pace was too hot for the pilot car. Before Lawrence had been reached, J. D. F. Moriarity in No. 3, caught up with the pilot and took Whitcomb aboard, sharing the place of pilot from there on with the Pope. The pilot made the full course, running free and at a moderate pace, and reached Kansas City nearly 5 hours after the leaders.

H. E. Rooklidge's White runabout was the first car to face the starter. It carried No. 2. R. C. Greenlease, whose Thomas should have had No. 1, could not get a car and did not compete. The other five cars which had finished perfect in the first run and did not compete in today's event were withdrawn because dealers had sold the cars which made the earlier tour. In this list were the Pierce, Packard, Peerless, a White and a Premier. The last named, owned by W. W. Cowen, president of the Kansas City Automobile Club, was withdrawn by him. This left the run practically a trade event, the only amateur driver to contest being M. C. Nolan, who, though not among the leaders, drove well.

No. 2 White was started at 7:04 o'clock from Kansas City. It crossed the line, then stopped to repair a clogged vaporizer. The delay cost 10 minutes and a broken seal. Then the car was away like a shot. Bad luck, however, was with it most of the day. Before Lawrence was reached, a halt had to be made for adjustments. The last 90 miles into Kansas City was driven with a wheel in such bad condition that it might have collapsed at any time. Fortunately it carried the car into town by 9 o'clock, over 3 hours late.

Following the White came Moriarity's Stevens-Duryea light six, and following at intervals of 4 minutes the others were sent off, in this order: Carl J. Simons, Oldsmobile; F. R. Sanborn, Stanley; Fletcher Cowherd, Jr., Corbin; H. Holzhauer, Pope-Hartford; W. S. Hathaway, Maxwell; M. C. Nolan, Stevens-Duryea, and W. M. Goodrich, Studebaker. Their going was without incident.

Hard luck came early to the Corbin, due to tire trouble and a slipping clutch that no amount of adjustment seemed to correct. The car checked at Lawrence and started for Topeka, but turned back to Lawrence and made its way through Olathe back to Kansas City, reporting its withdrawal. The Stanley blew out a fusible plug and was laid up on the road so long by this and by a shortage of gasoline that no amount of fast going could bring it in on anything near schedule. Still, it finished, as did every car entered with the exception of the Corbin. Studebaker No. 10 deserved a better fate. Most of its trouble was due to tires, on which seven repairs were made before the noon stop. This threw the car more than 5 hours late at the finish. All the other cars ran consistently and none was later than 3 hours at the finish.

ENTRY LIST A RECORD

Fifty-one Cars Nominated for the French Grand Prix—Thomas Crew on the Course

Paris, June 2—The final entry list to the grand prix closed tonight with fifty-one cars nominated, thirty-four of which are French, six Italian, six English, two German and one American. Five entries were received at double fees. This breaks the entry record, last year's grand prix uniting thirty-eight cars and the speed test of 1906 bringing together twenty-four competitors. Taking the two events together, it is by far the largest motor race gathering ever held on a course, the total entries for July 6 and 7 reaching no fewer than 114, of which sixty-two are in the voiturette contest. At a time when all touring competitions in Europe are, with one or two rare exceptions, failing to attract entries, this is strong proof of the popularity of racing. The adoption of an international rule and the announcement of the conditions of the race a long time in advance are jointly responsible for the record entry.

Practically all the racers are on the road. Though drivers on the whole did not receive their 1908 cars until the end of May, they have by no means been idle, every European connected with the grand prix having been out in last year's models or in fast touring cars since the middle of February. Szisz, of the Renault team, received his grand prix racer last Sunday and immediately set out for trial trips in the neighborhood of Orleans. Caillois and Dimitri, who will complete the team, are certain to have their cars on the road shortly. Externally the Renault racers are identical with those of last year, and it is only by close examination that differences can be detected. As a matter of fact, however, they are entirely original cars, the regulation making it impossible to make use of 1907 racers in any way.

All three Bayard-Clement racers are on the road in the hands of Rigal, Gabriel and Hautvast. Hemery was one of the first to receive delivery of a racer and must have his Benz thoroughly tuned up already. Heath, Farman and Cissac have just received their Panhards, chain-driven machines differing entirely from the hook-nosed racers with radiator on the dash which failed to finish last year. Nazzaro, Lancia and Wagner, still looked upon as the most formidable team, are believed to be still waiting for their new cars. Not much can be learned from the Fiat racers, but from the fact that Wagner is still around Paris his 1908 racer cannot be ready for a trial on the road.

It is quite probable that a second tire and gasoline station will be established on the Dieppe circuit in order to diminish the risk of any car being left stranded through lack of tires or any tool. Last year all work had to be done opposite the grand stand, in full view of the spectators, and it was intended to repeat this plan next July. Competitors, however, have complained of the distance and the sporting commission is considering the advisability of establishing a second station at Fresnay-Folny, about half way around.

According to the supplementary regulations just issued by the Automobile Club of France, grand prix racers must be presented for weighing in July 3 and 4 between 8 a. m. and noon and 2 and 7 p. m. Certification of the cylinder bore can be made at any time and place on giving notice to the sporting commission after July 1. When they have been examined and found correct each cylinder will be stamped in a suitable manner and spare cylinders may be treated in the same manner. At the weighing-in shed near the starting point the cars will be placed over a bed of sawdust and the engine run at full speed for a few minutes in order to verify the exhaust. If the sawdust is disturbed the exhaust pipe will have to be altered, until no disturbance is created, or if that is impossible the car will be disqualified. Where the maximum weight of 1,100 kilos is not attained by the car with its lightest set of tires, without water, oil, gasoline or spare parts, the amount must be made up by the addition of a bag of ballast sealed and attached to the car by a lead seal. At the end of the race the first four cars must have their cylinder dimensions verified and their carbureter and inlet pipe examined to ascertain that no "doping" has taken place.

Thomas Team in France

Dieppe, France, May 30—America's only team in the grand prix has arrived here and is now making arrangements for a camp near the course. Harry S. Houpt, who is accompanied on his European trip by Mrs. Houpt and their niece, Miss Dorothea McCartmey, is acting as race manager and trainer and believes that with 5 weeks in which to prepare, the Thomas car should make a good showing. A mistake which has been made by every previous American entrant in a European race is too late arrival on the ground, with the result that the cars never have been properly tuned up and drivers have had an imperfect knowledge of the course. Even with this early arrival the Thomas racing car will not be allowed on the course except on a few special days yet to be appointed by the racing board, that authority having rigorously barred everything but stock touring cars from the Dieppe triangle. Changes were made at the last moment in the composition of the Thomas team, the men who came over on the Adriatic being Lewis Strang, who will drive the car; William Knepper, the mechanic, and Montague Roberts, reserve driver. In addition two skilled mechanics from the factory are with the party. Strang has had some experience of the Dieppe course, for last year he was here as mechanic for Walter Christie in the front-driver.

PACIFIC COAST PROMOTES TWO ROAD RACES

PORTLAND, Ore., June 4—The first 100-mile road race ever held on the Pacific coast took place here today, and the honors went preëminently to the Studebaker cars. The two Studebakers finished some 25 and 11 minutes, respectively, ahead of the White, which was the only other machine that succeeded in getting over the course for the full distance. In the 58.6-mile race another2 surprise was occasioned by the victory of the Cadillac, which came out of the crowd as a dark horse. In this race the Cadillac and a small White steamer were the only cars to finish, all the others falling by the wayside through one trouble or another.

The races were given by the Portland Automobile Club, and for the 100-mile event a trophy valued at several hundred dollars was given by E. H. Wemme, one of the pioneer motorists of the city. The course was over the Base Line and Section Line roads from Gresham to Montavilla, giving some 15 miles to the lap. The course was carefully selected after consultation with every prominent driver within reach, and was almost ideal in all that such a race demands. There were slight grades and long downhill shoots straight away that permitted of great bursts of speed. The roads were carefully oiled and scraped, and for days prior to the race meet men were kept busy removing every rut or rise that might prove disastrous to cars traveling at a high rate of speed. The road is very broad at all points, and there is hardly a point at which cars could not readily pass without a lessening of their speed. Squads of men from the Oregon National Guard were employed to keep the crowds off the highway, and so well was their work done that not a spectator was injured. So perfect was the course, too, that in spite of all the mishaps that threw so many of the cars out of the race, there was not a single injury to a driver. In Portland a grandstand was erected which accommodated 6,000 persons, who were content to sit still and watch the cars as they flashed by in succession, an interesting sight.

The entrants in the 100-mile race were as follows: Studebaker, driven by Harry Bell; Studebaker, driven by N. R. Cooper; White steamer, driven by Fred Dundee; White steamer, driven by William L. Slimmon; Cadillac, driven by Howard M. Covey; Pope-Hartford, driven by William D. Wallace; Thomas Sixty, driven by W. T. Dodd; Oldsmobile, driven by H. O. Harrison; Thomas Forty, driven by W. A. Gill; Stoddard-Dayton, driven by S. Christopherson; Locomobile, which was driven by Murray Page.

Neither of the Studebaker cars figured very much in the early part of the race. Both of them got bad starts. The Locomobile, Oldsmobile and White steamer driven by Dundee cut out a very fast pace, the Locomobile's second lap being the fastest of the day. The 14 6/10 miles was covered in 16 minutes. After this performance the Locomobile was generally regarded as the winner and had a good lead, but in the third lap the car met with a mishap and was withdrawn. Then Harrison in the Oldsmobile took the lead and held it up to the sixth lap, when he was overhauled by Bell in the Studebaker. Harrison is a whirlwind driver and holds a number of California road records. Today he opened up the Olds for all that there was in it, but in the last lap disaster came, and a cracked cylinder retired his car from the race. In the fifth lap Bell's Studebaker had a narrow escape from disaster when it glanced against the fence before the judges' stand. Bell, however, had the car under perfect control and succeeded in getting it into the center of the road again. The Cadillac had tire troubles and was withdrawn, and the other cars met with various mishaps. Slimmon's White steam car went out in the sixth, Dodd's Thomas Sixty in the fourth, the Cadillac and Locomobile in the third, the Pope-Hartford in the second and the Stoddard-Dayton in the first lap.

The time of the winning Studebaker for the distance, which was approximately 102.4 miles, was 2 hours 4 minutes 8 seconds. The second Studebaker's time was 2 hours 18 minutes 47 seconds. Dundee in the White steamer was third in 2 hours 29 minutes 59 seconds.

The 58.6-mile race was for cars for $3,000 and under. Howard M. Covey's Cadillac covered the course in 1 hour 13 minutes and 20 seconds, and William Slimmon in a White steam car was second in 1 hour 20 minutes and 17 seconds. These were the only two cars that covered the full distance. The other contestants were Harry Johansen in a White steamer, W. F. Dodd in a Pope-Hartford, William D. Wallace in a Stoddard-Dayton, and Dr. C. B. Brown in a Kisselkar. The Cadillac got away fourth in the race, but before the end of the first lap it was in the lead and maintained its advantage to the end.

PLANT PARTIALLY WRECKED

Indianapolis, Ind., June 6—The new $75,000 plant of the Prest-O-Lite Co. on East South street was partially wrecked by a series of explosions that occurred this morning. The loss to a city fire engine house and a large hospital adjoining was more serious than that to the plant. The explosion is the third the Prest-O-Lite company has suffered here in less than a year. Recently the city council passed an ordinance requiring that the manufacture and compression of the gas should be conducted at some isolated spot and the company was building a small plant on the bank of White river. Within a week the whole manufacturing and compressing department would have been in the new location. Fifteen persons, the most of them employes of the plant, were injured by the explosions. The roof of the fire department house on the west was wrecked and some of the firemen injured. Patients at St. Vincents' hospital were terribly frightened and some of them were injured by bits of flying glass and the partial wrecking of the hospital building. The loss on the Prest-O-Lite plant is estimated at about $2,000 and there is no insurance.

ECHO OF DENVER RACE

Denver, Colo., June 6—Several of the defeated contestants in the Memorial day endurance race in this city came out in the public prints and charged that "the entry known as the Thomas Forty Blue Bird, to the best of our knowledge and belief, is not a regular stock car, but an especially built racing car, having participated in several contests prior to being shipped to Denver for the road race." E. Linn Mathewson, driver of the victorious Blue Bird and local agent for the Thomas factory, was prompt in meeting this charge, for he got together five men, selected by various newspapers in the city, to dissemble the car and give it a thorough inspection, with the result that the examiners rendered a statement under oath certifying that the Blue Bird is in every way a stock car and conforms to catalog specifications. Notwithstanding this statement, two of the defeated cars are likely to have another race with the Blue Bird at an early day. They are the Locomobile and the Colburn. Mathewson is willing to meet either for a purse of $1,000 in a race over the course.

ENGINEERS' PROGRAM OUTLINED

New York, June 8—Preparations for the third annual summer meeting of the Society of Automobile Engineers, which will be held in Detroit, June 25-27, are now complete, and the program prepared by the special Detroit entertainment committee gives promise of one of the most interesting gatherings that the society ever has had. The meeting will be opened Thursday morning, June 25, with a business session of the society, followed by attendance at the launching of a 10,000-ton lake steamer in conjunction with the American Society of Mechanical Engineers. One of the local plants will be inspected in the afternoon of that day, and in the evening papers on "Autogenous Welding," by E. S. Foljambe, and "The Storage Battery in Automobile Work," by Bruce Ford, will be read, the former being accompanied by a demonstration of the processes employed. Friday morning the members will join in the continued discussion of the paper on "Clutches," by Henry Souther, at the

session of the A. S. M. E., and in the afternoon a trip will be taken up the St. Clair in a steamer. In the evening a dinner will be held, and it will be followed by the reading of a paper on "Some Recent Developments in Magneto Ignition," by Otto Heins, in connection with which a number of lantern slides, showing the development of gas engine ignition during the last 25 years, will be shown. Saturday morning the plant of the Packard company will be visited, followed by a luncheon tendered the society at the Detroit Boat Club by J. G. Rumey, of the Detroit Steel Products Co., and there will be a motor car ride through Belle Isle Park and environs during the afternoon. In the evening there will be a business session, followed by the reading of papers on "The Unit System of Power Transmission," by Frank Beemer, and "The Increased Efficiency of Single Motor Drive," by A. L. Dixon. The Detroit committee is composed of H. E. Coffin, chairman, Henry Ford, Russell Huff, James H. Herron and Alanson P. Brush. The Cadillac hotel will be headquarters.

ORPHANS' DAY IN NEW YORK

New York, June 9—New Yorkers celebrated today with due charity and joy the orphans' day, which the New York Motor Club 3 years ago inaugurated. A committee of fifty made up of dealers undertook almost at the eleventh hour the promotion of the time-honored event. There were many heart failures during the final days over the chances of securing sufficient cars and money. Tradesmen and owners, however, in the end made good. There were fully 150 motor cars and motor trucks forthcoming, which literally packed carried close to 1,500 children from 10 orphanages. The feeding of them was another financial problem that created apprehension, but last night Ray M. Owen, of R. M. Owen & Co., sales agent for the Reo and Premier, called up the committee headquarters on the phone and offered to stand treat to a dinner of 1,500 plates. As formerly, Luna park was the objective point, and all its shows were thrown open to the kids, who had a glorious time, which they thoroughly appreciated.

STOPS HILL-CLIMBING

Cincinnati, Ohio, June 9—Chief of Police Millikin will permit no more hill-climbs to be held on the city streets, the order following the accident which disabled Walter White. It had been intended to allow those in the free-for-all who had not been permitted to make the climb because of the accident, have a try last Tuesday, but the chief interfered, whereupon the club had the contestants waive their rights and awarded the free-for-all cup to John J. Ryan, whose Stearns had made the fastest time in the class up to the White mishap. The latter was given second place in the free-for-all.

ORDERS ROYALTY CUT

Judge Curtis Takes Action Regarding Selden Matter—Pope Receivers File a Report

Hartford, Conn., June 8—An order has been passed by Judge Curtis in the superior court allowing a reduction of 20 per cent in the amounts asked for royalties under the Selden patent. Attorney Alexander, of Danbury, representing A. H. Meeker, of that city, a stockholder, wanted the order postponed a week, but M. Toscan Bennett, representing the Electric Vehicle Co. receivers, objected, contending that immediate action was essential. Judge Curtis passed the order which has already been passed by the United States Circuit Court of New Jersey. Mr. Bennett told Judge Curtis that since the appointment of the receivers on December 10 last, but very few of the motor car manufacturers operating under the Selden patent had paid their royalties. One and one-quarter per cent of the catalog price of cars is the rate of royalty, but for export it is but ¼ of 1 per cent. The members of the association, according to Mr. Bennett, had agreed to a 20 per cent reduction, and it was necessary to get the court order before the signatures could be obtained.

Bennett believed it was for the best interests of the receivers to make the reduction. The patent has 5 more years to run and less than 25 per cent of the royalties due have been collected since the appointment of the receivers. It would necessitate a considerable expenditure for litigation to collect all the royalties as suits would have to be instituted in about fifteen different states. The proposed agreement will reduce the royalties about 20 per cent and there is a provision that the maximum royalties to be paid by the association in any one year shall not exceed $250,000. The agreement also calls for the payment of back royalties which the various members of the association have refused to pay, under the new schedule of reduction.

In accordance with an order passed by Judge Curtis, Halsey M. Barrett and Henry W. Nuckols will receive $400 each for 4 weeks' service. M. Toscan Bennett, legal adviser of the receivers, reminded the judge that the receivers desired 10 weeks' compensation at $100 a week each, but had received $600 from the Illinois court and wanted the balance of $400 each from the Connecticut courts. Mr. Bennett was allowed a compensation of $1,500 on account and $91.95 for disbursements.

Pope Receivers Make Report

Hartford, Conn., June 8—Albert L. Pope, Egbert J. Tamlyn and George A. Yule, receivers of the Pope Mfg. Co., have filed a petition to Mahlon Pitney, chancellor of the state of New Jersey, giving the results of their operations up to this time and asking for authority to plan for the manufacture of 700 cars of the Pope-Hartford model for 1909 and also for 50,000 bicycles for next year's trade. In response to the petition the creditors and stockholders of the company are cited to appear in the chancery chambers in Newark on Wednesday, June 17, at 10 a. m., to show cause, if any, why the prayer of the petitioners should not be granted. The receivers state that since their appointment they have sold completed machines on hand and have made up completed stock into motor cars, having built 500 of the 1908 model. The receivers state that orders have been received for the full allotment of 500 cars, of which 400 have been shipped and the balance will be disposed of shortly. The operations of the Hartford plant from the appointment of the receivers up to May 1 have resulted in a net profit of approximately $215,890.20. The profits for the year ending July 1 have been estimated at $405,022.80. The profits of the Westfield, Mass., factory to May 1 net approximately $35,797.49, and the net profit for the year ending July 1 is estimated to be $69,399.47. The factory at Hagerstown, Md., according to the receivers, has been operated at a profit which up to May 1 is $17,546.85. The factories in Illinois were sold, two of which netted $236,000.

GARDEN SHOW DATE SET

New York, June 5—At the meeting of the board of managers of the licensed association, held yesterday, it was decided to hold the ninth national show at Madison Square garden January 16-23. Colonel George Pope made a revised report of the eighth show held last November, and also called the attention of the members to the progress being made for the ninth exhibition. Architects and decorators are now at work preparing material to be submitted to the show committee for the decorative scheme and general floor plan of the garden, and it is expected that at the next board meeting a decision as to just how the old garden will look for the ninth show, will be reached. As a result of the satisfactory results attained under the show committee of last year, the board was unanimous in re-electing Colonel George Pope as chairman of the new committee, with Charles Clifton and Marcus I. Brock as his associates and M. L. Downs, secretary. Mr. Brock was a member of the show committee up to the time he resigned to go with the Autocar Co. He now represents the Autocar Co., in association matters and his efficient work on the show committee entitled him to reëlection.

DENVER CUP ASPIRANT

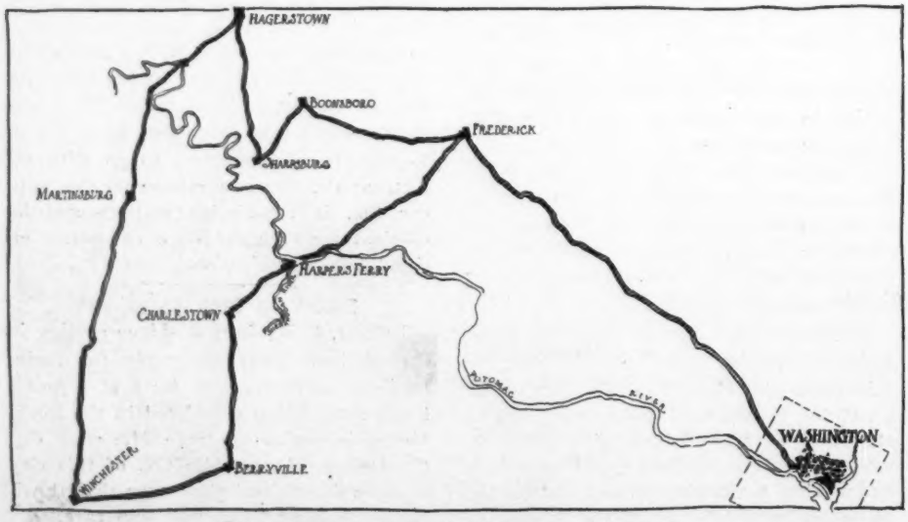
Denver, Colo., June 6—Since getting its first 40-horsepower car ready for racing purposes and giving it its first tryout 4 hours after being completed in the Rocky Mountain endurance race Memorial day, the Colburn Automobile Co., of this city, is more determined than ever that it will enter the next Vanderbilt cup race.

MOTOR BEAUTIES OF SHENANDOAH VALLEY

WASHINGTON, D. C., June 5—The 3-days' tour of the Automobile Club of Washington, booked for May 29-31, did not come off according to schedule owing to the small number of cars that turned out. Only four participated and when Harper's Ferry was reached the tour was abandoned, each driver being at liberty to finish the tour as his fancy dictated. The owners of two Buicks elected to take the Shenandoah valley trip, and it was this party the Motor Age correspondent was invited to join. The two cars left Washington on the afternoon of May 29, and went by way of Olney to Ridgeville. It is this Olney-Ridgeville stretch of road that the Automobile Club of Washington, coöperating with the Good Roads League of Frederick and Montgomery counties, is endeavoring to persuade the Maryland state road commission to improve from the $5,000,000 fund appropriated by the Maryland legislature for road improvement.

Frederick, Md., was soon reached and another run of 2 hours brought the tourists to Harper's Ferry, where the night was spent. Harper's Ferry is situated at the confluence of the Potomac and Shenandoah rivers. The principal portion of the town is irregularly built close around the base of a high hill, whose top is covered with hotels, cottages and private residences. The scenery around Harper's Ferry is grand beyond description and entitles it to rank with the finest bits in America. The junction of the two rivers, the Shenandoah a rushing torrent, and the Potomac placid and serene, and their joint passage through the narrow gorge in the Blue Ridge, form an inspiring picture, which easily justifies Thomas Jefferson's opinion in which he pronounced it "one of the most stupendous scenes in nature, and well worth a voyage across the Atlantic to witness." Harper's Ferry is of chief interest on account of its strategic location and it was during the civil war the scene of many severe engagements between the rival military forces. Leaving Harper's Ferry on the morning of May 30 the trip continued southward over a fine pike to Charlestown, W. Va. The roads throughout this section are superb. At Harper's Ferry begins the trip through the historic and scenic valley of Virginia. The valley proper, which is widely famed for its beauty and productiveness, lies between the Blue Ridge and the Alleghany mountains, but is cut up into smaller valleys by other ranges like the Massanutten and the North mountains, which rise up and extend for great distances, dividing it lengthwise into parallel valleys. The majestic Blue Ridge peaks tower above the splendid pikes, while across the wavy ascending and descending planes of the valley, dotted here and there with well built towns, fine farms and magnificent forests, can be seen the bold outlines of the mighty Alleghanies.

At Falling Water, Va.



Map Showing Route Followed by Tourists

The general aspect of the valley is very pleasing and the motorist never wearies of the kaleidoscopic views constantly before him.

Arriving in Charlestown, W. Va., the party found the town in holiday attire, it being Memorial day. Charlestown is the county seat of Jefferson county and has a population of several thousand. It was established in 1786 and called after the Christian name of its founder, Colonel Charles Washington, a brother of the first president. Near Charlestown is located Washington's Masonic cave, in which, tradition says, George Washington, with others of the Masonic fraternity, held stated communications.

From Charlestown the pike stretches through a beautiful landscape of billowy hills and fertile dales. Several miles away in the background the majestic Blue Ridge can be seen, an unbroken range flanking the east side of the valley. About 15 miles beyond Charlestown is another flourishing town—Berryville, Va. It was established in 1798 and was the scene of many combats during the revolutionary days; so many, in fact, that for a long time it was known as "Battletown." Numerous fights took place around it during the civil war and it was occupied by each army on several occasions.

Twelve miles across the valley from Berryville, over a pike as smooth as an asphalt street, is the enterprising valley town of Winchester, famed in history and poetry. Winchester is full of historic interest and the tourists are always reluctant to leave it. It is said that the ground on which Winchester stands was at one time occupied by a large and powerful tribe of Indians called the Shawnees. The Scotch-Irish settlers erected buildings here as early as 1723, but its establishment as a town dates from 1752, when a charter was obtained from the general assembly. Many severe engagements took place in the vicinity of Winchester during the civil war and for a time it was the base from which Stonewall Jackson operated.

Leaving Winchester the tourists had a delightful and inspiring ride over the pike to Martinsburg, W. Va., where the night was spent. The city is the county seat of Berkeley county, and is the center of a rich agricultural country. An early start was made Sunday morning, with Hagerstown, Md., as the objective point. Mile after mile of the road was through scenery the like of which would be hard to find. Coupled to this was as fine a stretch of road as the most exacting could demand. A 3-hour ride brought the party to the Potomac river, opposite Williamsport, Md. The ferry boat was large enough to carry the two cars across at one time and no time was lost in getting into Hagerstown. This is the second larg-

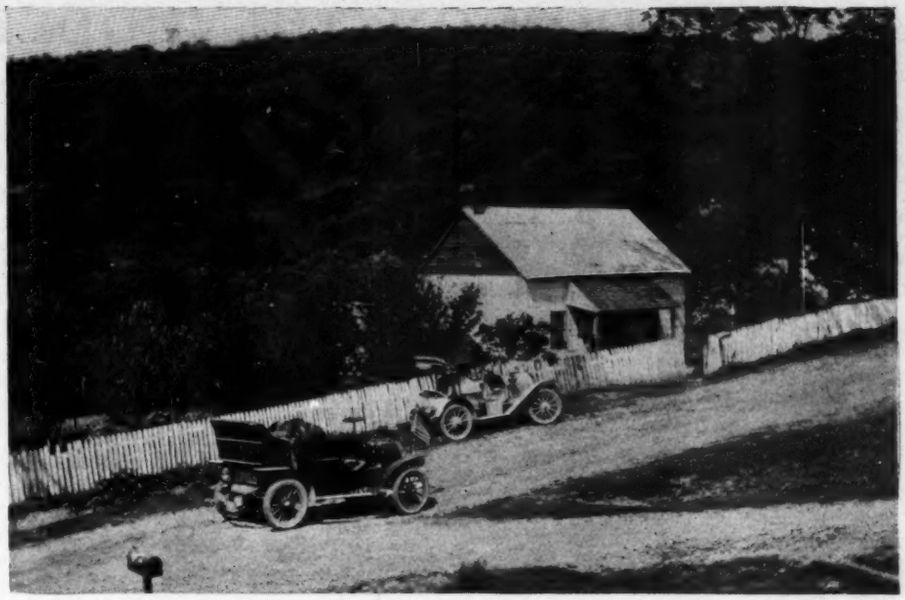
est city in Maryland and is situated on the celebrated Antietam creek. All the country around Hagerstown ran with blood during the civil war. A short distance from Hagerstown is Sharpsburg, where one of the bloodiest battles of the war took place.

After a brief rest the party proceeded to Boonesboro, delighted with the trip so far and sorry for those who had not chosen to be of the party. Everyone had had a good time and it was with regret that the run home was started.

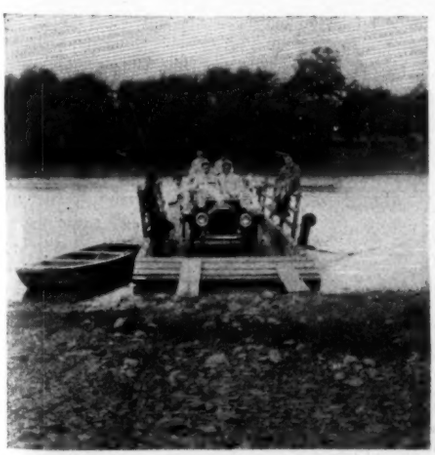
From Boonesboro to Frederick was over two mountains, but the roads were in good condition and the cars made the ascents in great shape. In fact, throughout the trip it was not necessary to lift the bonnet of either car and there were no tire troubles. As the distance covered was about 300 miles it will be seen that the cars behaved exceedingly well. Frederick was reached just before dark and after replenishing the tanks the cars were sent over the road to Washington at a good clip. The city was reached in good season and all the participants voted it the best trip they ever had.

CLIMB AT WILLIAMSPORT

Williamsport, Pa., June 8—The hill-climb of the Williamsport Automobile Club over Vallamont hill last Saturday afternoon furnished excitement galore to drivers and spectators. The famous hairpin turn on this course claimed victim after victim, not alone in the actual competition, but in practice as well. Friday fully half a dozen cars went to the bad while trying to negotiate the tricky bend, while on Saturday as many more went off the course. Only one serious accident resulted, however. A. A. Jones, winner of the less-than-$1,000 class at Wilkes-Barre, lost control of his Ford at the hairpin, and after skidding badly the car bucked, threw Jones out, ran over him and plunged through the rail and down the hill into the woods. Jones sustained several broken ribs, a badly-lacerated elbow and possible internal injuries. C. A. Ward, the Matheson driver, who had such hard luck with his tires at the Wilkes-Barre climb, in his first trial lowered the course record from 1:59 to 1:40⅘, but on his second attempt slipped a tire and went over the bank on the hairpin, but jumped in time to escape serious injury. The Stevens-Duryea driven by H. J. Carton lost two of its wheels at the same place. H. Tucker's Corbin also lost a wheel there, but went to the finish slowly on three wheels and a hub. An Imperial and several other cars also went to the bad at the hairpin and were compelled to withdraw. Besides the Matheson record time, the course was negotiated four times under the 2-minute mark—twice by C. B. Brockway's Imperial in 1:55⅘ and 1:57; E. H. Zimmerman's model E Jackson in 1:55, and F. P. Brand's Imperial in 1:58⅘. In the event open only to Maxwell cars a model D was sent to the top in 2:00 flat. Other good times made were those of M. Longstreth's Maxwell, 2:02⅕; C. B. Kaufman's Ford, 2:03⅘; J. H. Link's Maxwell, 2:01⅘, and the Stevens-Duryea's 2:02⅘. In event No. 2, for electrics, F. G. Peck's Babcock won in 3:12, Harry Noll's Pope-Waverley requiring 5:15 to make the journey to the top of the hill.



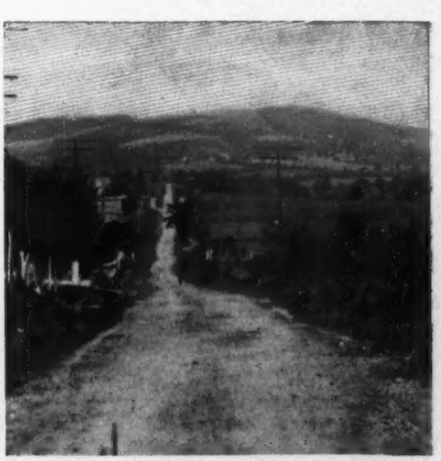
MOUNTAINOUS COUNTRY FOUND NEAR BOONESBORO, MD.



CROSSING THE POTOMAC RIVER

RIDE FOR PITTSBURG ORPHANS

Pittsburg, Pa., June 4—The fourth annual orphans' day turned out to be a rare occasion in all ways. The efforts of the Automobile Club of Pittsburg to give about 800 orphans a splendid day of pleasure yesterday succeeded even beyond its expectations. More than 100 cars were donated for the occasion. The children were taken up at the homes at 10:30 o'clock. All the north side divisions assembled at North avenue and Federal street and then joined the Pittsburg divisions at Hotel Schenley. A long drive through the parks ended at 1 o'clock at Carnegie lake, one of the most beautiful spots in western Pennsylvania. After lunch the children were taken up again at 3 o'clock and were returned home in the same divisional order in which they arrived. The day was under the direct management of Secretary Paul C. Wolff of the automobile club, who had worked very hard to secure the necessary number of cars. The weather was ideal. The procession was led by George E. Painter in a runabout and accompanied by Chief Ordinance Officer Murray A. Livingston. Edward Kneeland, president of the club, acted as special pilot through Schenley park, using his big touring car, filled with more than twenty children, for this purpose. The little tots had prepared for the day and sang such songs as "School Days," "See-Saw" and "I'm Afraid to Go Home in the Dark." The smallest child in the procession was 2 years old and the oldest ranged from 15 to 18. The long procession met Speaker Joseph G. Cannon in his Studebaker, which had brought him from Washington to Pittsburg, and gave him a big round of cheers in Schenley park. Among the institutions represented were the Temporary Home for Children, the Christian Home, the Center Avenue Temporary Home, the Industrial Home for Crippled Children.



STRETCH LEADING TO MARTINSBURG

LUBRICATION ON THE MODERN MOTOR CAR

EDITOR'S NOTE. The following article on "Lubrication on the Modern Motor Car" was written by Arthur H. Denison, the well-known authority on the subject.

ON the modern gas engine there are moving parts subject to very high temperatures and pressures, and this has naturally brought about the development of lubricants suitable for these conditions. Lubricating oils are one of the products of crude oil or petroleum, either volatilized by the action of heat or separated by other methods. The operator of a car does not need to know the chemical composition of oils or the refining operations necessary to their manufacture, yet knowledge of the necessity for oils, and the many places where they are needed is absolutely necessary to insure the successful operation of a motor car.

The primary value of an oil is its ability to keep the two surfaces it is intended to lubricate separated, thus reducing friction. Friction is present in all moving objects, and in machinery is due to minute irregularities in both surfaces, which, when viewed under a microscope, seem rough like files. Extracts from the laws of friction that need to be considered here are: "Friction varies with pressure, increases with the roughness of the sufaces, and is diminished by polishing or lublicating the surfaces. Considering the law—"Friction is diminished by lubricating the surfaces," a suitable oil will both fill the minute irregularities and maintain a film between the two surfaces, preventing them from actually coming in contact. There is always pressure on a bearing, and the effect is a tendency to separate the molecules of the lubricant, forcing enough out from between the surfaces to allow the metals to come in contact. The value of an oil therefore, is its ability to resist the tendency to be forced out of the bearing. In opposition to this tendency to separate the molecules is the force termed cohesion, or in oils, viscosity, meaning the attraction of one molecule for another; consequently the higher the viscosity of an oil the more suitable it is in bearings subject to heavy loads.

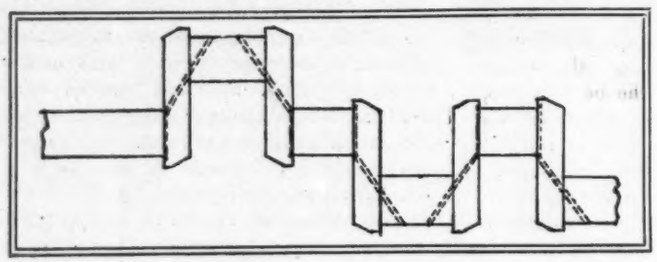


FIG. 1

Friction always generates heat and an increase of one degree causes a proportionate increase in volume, the molecules of the substance being driven further apart and the force of cohesion lessened. If the temperature is raised sufficiently and the substance vaporized, the force of cohesion is overcome entirely. The manufacturer of oils today provides different grades for almost each class of work. Oils intended for use in machinery, such as sewing machines, bicycles, guns, etc., are not subject to heavy loads or heat, therefore, the composition of the oil is determined with regard for these conditions. Oils for steam engines must withstand the temperatures and pressures of steam, that of saturated steam, or of steam in contact with water, is about 225 degrees F. The flashing point of these oils is so low that when subject to the temperatures of the gas engine they would be readily decomposed by this action.

Oils of High Flash Point Required

The temperature of the burning gas, during the time combustion is in progress is estimated at 2,500 degrees F. and upward. The melting point of cast iron such as the material in the cylinder is between 2,200 and 2,300 degrees F. On the other hand, the oil and cylinder walls are subject to these temperatures for a very short period of time. In a motor of 5-inch stroke, running at a speed of 600 r. p. m., the power stroke, or length of time the maximum temperature would be maintained, would be 1-40 of a second.

Taking into consideration the cooling influence of the waterjacket, also that of the gas introduced on the suction stroke, the average temperature of the cylinder walls is estimated at about 500 degrees F. Fluids are poor conductors of heat, consequently the oil film on the cylinder walls protect the cylinders to a certain extent. The best temperature of the water in water-cooled engines has been ascertained to be about 210 degrees F., and this would leave the mean temperature of the cylinder walls about 350 degrees. The fire test of good lubricating oil should be at least 400 degrees F., so there is a reasonable margin of safety. The water-cooling system is not intended to keep the motor cold, merely cool enough to preserve effective lubrication, and any surplus oil is burnt off and passes out with the exhaust gases, becoming visible as white smoke on being discharged into the atmosphere. The expansion of pistons and cylinders due to friction is not taken into serious consideration, the pistons being machined small enough to allow for expansion due to the temperature during combustion, and the elasticity of the piston rings is sufficient to take care of anything short of overheating.

Carbon, which enters largely into the composition of oils, is separated by the action of the intense heat and is deposited on the walls of the combustion chamber, plugs, etc., therefore, using an excess of oil causes various forms of trouble. The carbon, becoming incandescent, may fire a charge of gas prematurely, causing excessive strains on the piston, piston pin, and crankshaft. The motor will also pound, giving a sound similar to that when the spark is advanced too far with the motor running slowly, and under a heavy load. The ignition plugs will be fouled or short-circuited and the motor is liable to overheat. Considering, finally, the length of time needed to make proper adjustments, and that of clearing the cylinders of the carbon deposits, there is no reason or excuse for having a car in everyday use smoking like a locomotive. To insure sufficient oil reaching the cylinders, a groove is usually turned in the cylinder walls, at a point low enough to prevent oil being taken directly into the combustion chamber. Shallow oil grooves, turned in the piston, or a ring placed below the piston pin, pass this every stroke and carry up a certain amount of oil, depositing it on the cylinder walls, the upper rings then collecting and carrying it to the top of the cylinder.

Poor Lubrication Affects Compression

The oil working into the minute irregularities between the piston rings, their grooves and the cylinder walls, has much to do with the ability of the piston to hold compression, especially if the rings or cylinder are somewhat worn. This will be noticed by the driver who has given the cylinders a bath of kerosene to clean them. It will be found that the compression will leak out very much quicker than when the cylinders have plenty of oil. Some manufacturers using quantities of oil in the oilpan have found it necessary to put baffle plates at the bottom of the cylinders, leaving room for the movement of the connecting rod, and yet found that plenty of oil reached the cylinder walls.

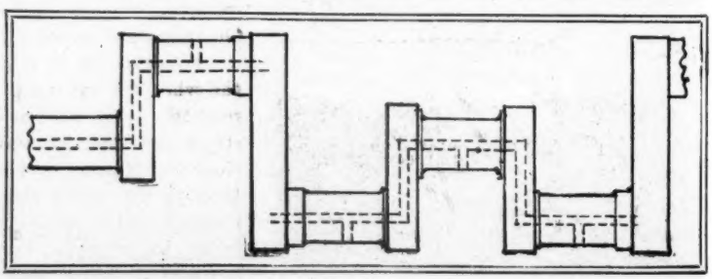


FIG. 2

Without the baffle plate so much oil was taken into the combustion chamber that the motors constantly emitted a dense smoke, and were bothered a great deal with carbon deposits. The usual location of the camshaft is in the crankcase so that oil is splashed on it by the connecting rods. If placed there it never needs attention so far as oiling is concerned. Some designers place it in a separate compartment and fill this with oil or grease, but this system has no particular advantage.

The connecting rod and crankshaft bearings must be provided with plenty of lubricating oil and it is common practice to use one grade of oil in the engines. There is a pressure on the piston and transmitted directly to the crankshaft, at the beginning of the power impulse, of between 10 and 18 atmospheres, depending on the amount of throttle opening, and the oil must have sufficient viscosity to maintain a film between the bearings and crank pins that will cushion the sudden force of the explosion. Here the expansion due to friction is very important and the design must provide for sufficient lubrication, also sufficient bearing surface so that the heat generated may be readily dissipated. If the bearings run hot, the crankshaft becoming heated must expand, likewise the bearings, and the two expanding uniformly in all directions, will grip each other much tighter, using much more power and either shaft or bearing will be badly cut. If the heat is increased to the danger point the bearings will be burnt and constructing rod or crankshaft is very liable to be broken.

How Lubricant Reaches Bearings

Figs. 1 and 2 show two different methods of drilling the crankshaft to convey the oil to the crank pins, and it will be noticed that the oil holes discharge at the highest point of the revolution, corresponding to the position of the piston at the beginning of the power or firing stroke. The supply is received by the main bearings from the oil pump and the oil hole in the shaft, coinciding with that from the oiler has a little oil forced in each revolution and generating centrifugal force throws it rapidly through the passages. The majority of modern motors are equipped with splash lubrication and have the connecting rods dip into the oil each revolution and splash it all over the inside of the crankcase. Some types are equipped with a scoop pointing in the direction of rotation, at the lower end of a passage connecting with the crank pin. The oil is sent into these passages with considerable force, owing to speed of rotation, thus assuring sufficient oil to the connecting rod bearings. Fig. 1 shows a section of a crankshaft for a four-cylinder motor, having five main bearings, and showing one method of drilling shaft to lubricate connecting rod bearings. Fig. 2 shows a section of crankshaft for a four-cylinder motor, having three main bearings, and showing the method of drilling crankshaft to lubricate connecting rod and bearings.

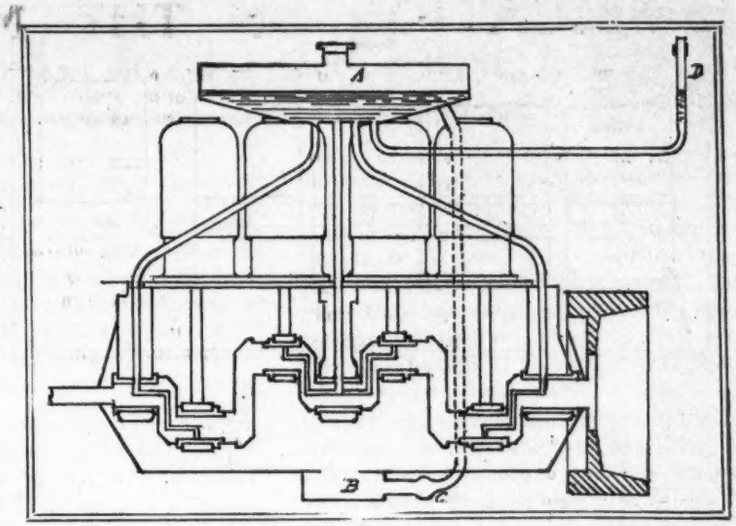


FIG. 3

This is worked to the ends of the bearing and thrown off in the shape of a fine mist that penetrates to every part of the crankcase. The oil splashed onto the lower cylinder walls and not carried up by the piston is caught in little troughs, cast in the crankcase and drilled so that the oil runs down to the main bearings. In addition to the pipe from the oiler, the better designs provide an oil wick or an oil ring or chain, all types carrying oil from a shallow pocket corded in the bearing cap, the wick by capillary attraction and the ring or chain, revolving with the shaft, their lower ends immersed in the oil will carry up a considerable quantity that will spread over the shaft. This oil ring system is used very successfully in electrical machinery. With a splash lubrication it is advisable to drain the crankcase at frequent intervals, and also to put in a fresh supply of oil.

The modern ball-bearing gear box requires but little attention. Periodic filling with suitable lubricants is sufficient. On chain-driven cars the gears and differential are usually exposed by lifting one cover. On shaft-driven cars the differential and rear axle system requires a certain amount of attention, as too much oil in the differential is liable to leak through the axle sleeve and hub, usually getting on the brake drums. If this happens, the best thing to do is to jack the wheel up and squirt gasoline on the drum, slowly revolving it meanwhile. Manufacturers usually put a plug in the differential case showing the proper height at which to keep the oil level. The gear box should be kept a little less than half full. If too much is put in, the oil will be thrown out of the shaft and bearing housings, but a little leakage does no harm as there is always dust present and the oil leaking will serve to fill the crevices and make the case dust-tight. In regard to the wheels, universal points, clutch, and many little places about the car, all need attention occasionally as almost any motor car driver knows.

Care in Oiling Prime Necessity

The wheels should be cleaned and packed with grease once or twice a season, universal joints at intervals necessarily shorter. Latest designs provide for their lubrication through the shaft from the gear box. Earlier types are best packed in grease and enclosed in a leather boot. On many shaft-driven cars, where the shaft runs through a sleeve, daily attention should be given. The lack of a few drops of oil may rob the car of 50 per cent of its power. Multiple disk clutches use oil or an oil and kerosene mixture, and the tendency seems to be for the oil to gum. Their action when slipping or dragging is sufficient indication as to when they are in need of attention. Leather-faced clutches will work much better when cleaned with kerosene and given a dose of neatsfoot or castor oil. The oil should be spread over the surface of the leather by using a long knife blade, or by running the motor for a few moments with the clutch released. When treating the clutch leather this way it is better to let it stand over night if possible, and with the emergency brake lever, or a block of wood against the pedal hold the clutch disengaged. A hand oil can with a long spout is almost indispensable, and the starting crank, the steering pivots and connections and the spark and throttle connections, gear control and emergency brake levers, clutch and brake pedals, shafts and connections and the fan bearings will all work much quieter and sweeter for a few drops of oil regularly. It is the practice of drivers to fill the oil can from the cylinder oil supply and this practice is to be commended, as many lower grade oils contain acids enough to etch steel.

Here is a quick and simple method of oiling driving chains when touring, or in a hurry. Fill an oil gun with oil and direct the stream of oil out of its spout so it will fall on that section of the chain stretched between the top of the sprockets, and so the oil will reach each link. This is easily accomplished by varying the pressure on the piston of the oil gun. The links on the sprockets may be reached later and the oil on the free links will drip off and in falling will strike the lower section of the

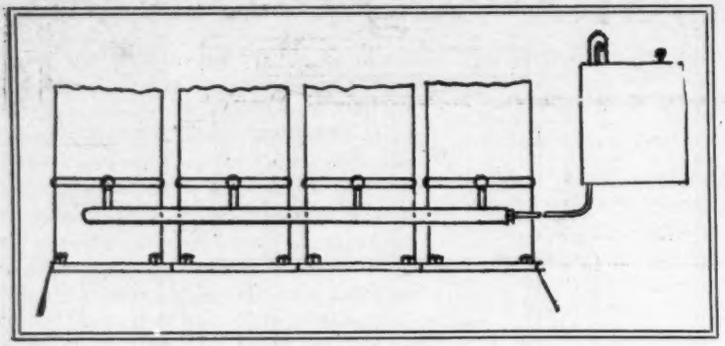


FIG. 4

chain, thus lubricating its links. Driving chains when dry will make a disagreeable noise and often cause a jerky motion of the car that may be easily misunderstood as something serious. The best method of lubricating chains is to clean them thoroughly in kerosene, then boil in a preparation of graphite and tallow that can be bought for this purpose. By this method, the grease is driven into all joints and will last longer, and by keeping the dirt out, will reduce the wear. After removing the chain from the lubricant the surplus should be removed with a cloth. The timer should be cleaned with kerosene or gasoline at regular intervals, and a little oil or thin grease put in. Graphite, which is not affected by temperatures of 2,000 degrees, F., may be used to good advantage in many places, though it must be handled carefully, as there is danger of clogging passages. It is very beneficial in the cylinders, filling the pores of the iron, and it preserves its lubricating qualities indefinitely. When using it the manufacturer's instructions should be followed closely.

Various Methods Employed

The history of lubricating devices shows the use of many different types—individual oil cups with gravity feed, reservoirs with the oil flowing by gravity through sight feeds to the motor, some controlled by hand—and the operator's memory—others interconnected with the switch. Exhaust pressure has been used quite extensively in four-cylinder vertical motors, and crankcase pressure in the two-cylinder horizontal opposed type. Current practice now indicates a tendency among designers to use systems that may be trusted absolutely and to that end many of the better cars have force-feed oilers with either gear or flexible shaft drive. The steel spring belt and leather belt drives seem popular, but chains do not seem to be used very much. The latest system coming into general use is a continual circulation system. An oil level in a crankcase is maintained by means of holes drilled at a certain height, the extra oil flowing through these holes to an oil well.

It is drawn from here by an oil pump and forced to the cylinders or main bearings, and the unused oil dripping to the oil pan and from there to the oil well serves to keep up a continual circulation. Another design somewhat similar, pumps the oil to a tank near the cylinder heads, and it flows from there by gravity to the main bearings. These systems are very reliable and are usually provided with some means of ascertaining the amount of oil in the reservoir. The oil circulated practically similar to the water in the water-cooling system does not require the daily attention and filling of the tanks that the other systems require. The oil gradually loses its lubricating qualities and after running some time it is advisable to drain the old oil off and put a fresh supply in. The maker's instructions will give necessary information in regard to the mileage on one filling. Splash lubrication is provided for on all but a very small percentage of American cars, without regard to the system used—whether force-feed or continual circulation. Many high-powered cars are fitted with a reserve oil tank holding from 1 to 3 gallons, and on some cars the tank and the methods of raising the oil to the oiler could be greatly improved. At least that is the opinion of many engineers.

Show Diversity of System

There are no fixed rules in laying out a lubrication system. One American car, with a motor developing nearly 60 horsepower, has two sight feeds, feeding the crankcase only and depending on splash lubrication altogether. Another high-grade car, rated 50 horsepower, has a gear-driven oiler on the dash with ten feeds, four to the cylinders, five to the main bearings and the tenth to the timing gears. The majority of cars seem to use from four to eight feeds. Fig. 3 shows a method of oiling the cylinders from one feed and distributer and insuring an even supply of oil to each cylinder. The same system may be applied successfully to the main bearings and the maze of pipes seen on some cars thus done away with. This method would not preserve the value of the pressure feed to each point, though the pressure from the pump would be present to the discharge point. Fig. 3 also illustrates the continuous circulation oiling system of the Pierce-Arrow. The oil flows from the crankshaft into the oil well B, and is pumped from there into the tank A at the cylinder heads. It flows by gravity to the main bearings, and oil ways drilled in the crankshaft to the connecting rod bearings. The oil pump, not shown, is at C. D is a glass showing height of oil in the reservoir. Fig. 4 is a diagram showing a distributer to oil cylinders. The oil pump forces the oil into the long tube, and from there it rises vertically an inch in order to insure equal pressure on the connections to each cylinder. Placing check valves at the top of this short vertical pipe would be good practice, but it is not absolutely necessary. Fig. 5 is the principle of the oil ring. A is the shaft, B the bearing, C the oil ring and D the oil. The oil chain is very similar, the flexible links conforming to the contour of the shaft for the upper half of its circumference.

Designs have shown both extremes. One high-grade car appeared on the market with oil pipes, sight feeds, reservoirs, pumps, in short everything pertaining to the oiling system that could be placed on the dash was there, then other models have been brought out with only a button for stopping the motor by short circuiting the ignition current. It will be noticed that the majority of cars with an oiler on the dash show plainly the effects of the oil leaking, rotting the rubber mats and soiling anything and everything it comes in contact with. Modern oilers have been developed to such a stage that they may be almost absolutely relied upon, and there is no reasonable excuse for its presence on the dash. It is of interest to no one but the driver and he has plenty of opportunities to test or watch its working if placed in its proper place—under the hood. Compression grease cups are used to advantage on many cars with the camshaft, and rocker arms at the cylinder heads, but the grease cups employed have usually been of small sizes.

Oil leads should be cleaned out occasionally with gasoline, compressed air or steam, the latter being the best. A motor properly lubricated will not stop at once when the ignition is cut off. It should turn over several times, depending on the energy stored in the flywheel, and after the last complete revolution has ended the flywheel should swing backward and forward a few times before coming to rest. Were the cylinders taken off the pistons would be found on the same horizontal plane.

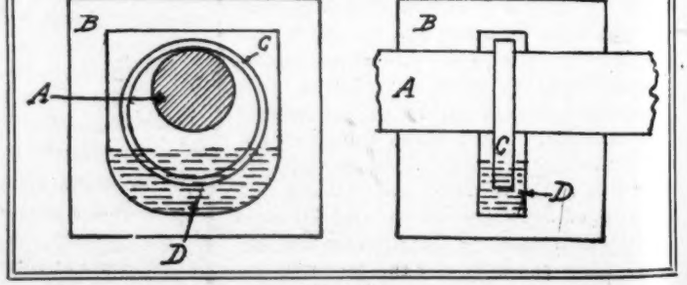


FIG. 5

The Readers' Clearing House

EDITOR'S NOTE—In this department Motor Age answers free of charge questions regarding motor problems and invites a discussion of pertinent subjects. Correspondence is solicited from subscribers and others.

FRICTION TRANSMISSION CREEPS

Terryville, Conn.—Editor Motor Age—My Orient friction-driven 1907 machine engine runs beautifully and drives well on the extreme high speed when the driving wheel is running against the shoulder of the jackshaft, but on any of the lower speeds it will creep rapidly to the high—to the outer edge of the driving disk—and if the lever is held with sufficient force to prevent creeping it will stall the motor, whether there is any load on the engine or not. On the reverse it works nicely, with no tendency to creep. I have tried to cure it by means of the radius rods and also by different alignment of the jackshaft. Has some one else had the same difficulty and found a way out?—F. P. Tolles.

The trouble undoubtedly is that the friction disk on the end of the crankshaft of the motor is out of alignment, due to the motor supports settling. In this car wood sills are used for the framework, and if you examine closely you may find that the motor supports have settled slightly on one side into these wood sills. What you will have to do is to put shims, consisting of thin strips of tin or other metal, between these supporting arms and the frame, until the motor support arms are brought up to their normal height, which will have the desired effect of bringing the friction disk back into proper alignment. With this done it would be well to see that the jackshaft is in a plane at right angles to the frame on the friction disk.

ENGINE OVERHEATS BADLY

Chicago, Ill.—Editor Motor Age—What is the trouble with my car, which is a four-cylinder 50-horsepower machine? While on the road the engine gets particularly hot, and after standing all night and starting the next morning it only takes a few minutes' running to get it as hot as ever. I have examined the entire water system, convincing myself of the fact that the radiator is in operation, that the water pump works all right and there is no impediment in the entire system. I have examined the carbureter to see that the mixture is not too heavy and have also looked into the carbureter control to ascertain if it has not shifted.—C. F. V. S.

The trouble may be due to two causes: First, preignition, caused by carbon in the combustion chamber, which carbon glows sufficiently because of the heat to ignite the mixture before the proper time, the result being a natural heating owing to the slower burning of the gas because the compression is not at its maximum. You undoubtedly would have discovered this by the irregular running of the motor and frequent knocking. If this is not the case, it may be your exhaust valves are not seating properly, allowing a portion of the mixture to escape, thereby reducing the compression which results in the mixture burning more slowly, which causes heating. The best remedy for this would be to examine the valves and correct the timing of the exhaust valves. It is quite certain the trouble is not with the intake valves, because should they fail to close properly there would be danger of back fire into the carbureter.

MAKES THORDARSON COILS

Danville, Ill.—Editor Motor Age—We are looking for the firm which makes the Thordarson coil. Can Motor Age give us their name and address—D. D. Snyder & Co.

The Thordarson coil is manufactured by the Thordarson Electric Mfg. Co., 153 South Jefferson street, Chicago, Ill.

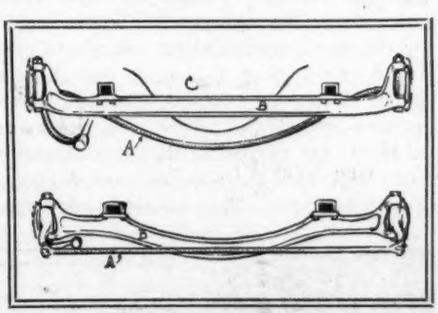
LUBRICATE GENEROUSLY

Detroit, Mich.—Editor Motor Age—The most common error on the part of amateur motorists is in neglecting lubrication of small parts. Nearly every one will see that the motor is given its regular quota of oil and that the transmission and rear axle are properly filled; but the lubrication of such things as fan, front wheel, steering connections, spring link, and various lever bearings is entirely lost sight of. Manufacturers place attractive brass oil and grease cups at all important points of the car where it is practicable to do so, in the hope that they will be noticed and used, but in too many instances the result is not attained. Not only is lubrication neglected but a cheap oil is used merely to save a few cents per gallon. This one thing often results in repairs of a very expensive nature.—H. E. Coffin.

CHICAGO-BUFFALO ROUTE

Wausau, Wis.—Editor Motor Age—Kindly advise through the columns of the Readers' Clearing House the best touring route from Chicago to Buffalo, as several parties are going to make the trip in the near future.—John Fehl & Sons.

The best touring route from Chicago to Buffalo is by way of South Bend, Ind., Waterloo, Ind., Toledo, O., Cleveland, O., Erie, Pa., and Buffalo. Leave Chicago through Jackson park, go by way of South Chicago, Hammond, Laporte and Valparaiso to South Bend. From South Bend go through Mishawaka, Osceola, Elkhart, Goshen, Millersburg, Ligonier, Wawaka, Brimfield, Kendallville, Waterloo, Butler, Ind.; Bryan, Stryker, Archbold, Wauseon, Delta, Swanton, Java and Toledo, O. From Toledo to Cleveland the route is through Stony Ridge, Lemoyne, Woodville, Fremont, Clyde, Elyria, Ridgeville, Bennett, Dover, Finneys Corners, Rock River and Cleveland. From Cleveland to Buffalo the course is by way of Willoughby, Mentor, Painesville, Madison, Geneva, Ashtabula, Conneaut, Girard, Fairview, Erie, Pa.; thence by way of Wesleyville, Harbor Creek, Moorshead, Northeast, State Line, Ripley, Forsythe, Westfield, Brockton, Fredonia, Sheridan Center, Silver Creek, Irving, Farnham, Evans Center, Wanahak and Buffalo. The distances are as follows: Chicago to South Bend, 102 miles; South Bend to Toledo, 166 miles; Toledo to Cleveland, 121 miles; Cleveland to Erie, 110 miles; Erie to Buffalo, 94 miles.



FITTING THE STEERING LINK

FITTING THE STEERING LINK

London, Eng.—Editor Motor Age—I dare say that but a few of Motor Age readers have ever troubled their heads as to whether the cross steering link of their motor car is carried in front of or behind the front axle. This may seem but an unimportant point to the casual observer unacquainted with the mechanical advantages and disadvantages of the two systems, but in the fitting of the steering link, as in everything else, there is a correct method, and a method that is not correct, and I will endeavor to explain why the cross steering link should be carried in front of the axle. In the first place, the natural tendency of the front or steering wheels while traveling ahead, is to splay outwards; this causes the cross steering link to be in tension, when, of course, it is very much stronger and more instantaneous in its action than would be the case were the cross steering link to come into compression. When the cross link is carried behind the axle the above tendency is reversed, but in these cases it has been found necessary to make the cross link much heavier, in order to withstand the compressive stresses, which are much less easy to resist than the effects of tension. The most fatal defect in a cross link is when it is bent; a bent rod never is a good job, but certain designers by

carrying their cross link behind the front axle are compelled to bend it in order to clear the crankcase, the alternative being to carry it very close to the ground, thereby losing much of the protection afforded by the front axle. The accompanying illustration shows the meaning very aptly. In one is shown the front view of a Napier car. The straight cross line A, carried well forward of the axle B, is always in tension, and is moreover well clear of the ground, and further protected from stones and against deep ruts, by the front axle, the lower part of the axle being considerably nearer the ground than the steering link. The upper illustration shows the front view of a French car and here we find all three of the disadvantages to which I have referred, namely: 1—The steering link A, is behind the front axle B, and is therefore in a constant state of compression, and consequently less efficient while also being subjected the whole time to compressive stress. 2—The steering link A is curved, which is entirely opposed to all mechanical theory. 3—In order to clear the crankcase C, the steering link is carried close to the ground, and is very vulnerable to many objects over which the axle would pass quite easily. In other words, the vital part of the car upon which the passenger's safety depends, is entirely unprotected in any way, but is further weakened in its action, owing to the design.—S. F. Edge.

IT INCREASES EFFICIENCY

Austin, Tex.—Editor Motor Age—Has it ever been decided by authorities whether taking air from around exhaust pipe increases the efficiency of the engine with standard gasoline carbureter? Is power gained and fuel saved?—William H. Gerhard.

Air is taken from along the exhaust pipe of gasoline engines because of it being warmed by contact with the pipe, the warm air being desired owing to its superiority in vaporizing gasoline. Frequently, in hot summer weather, cars which take the air from around the exhaust pipe cut this out and take it direct from the atmosphere. Regarding increasing the efficiency of the engine, it has been declared authoritatively that such is the case. The increase in efficiency is due to the better pulverization of gasoline due to the warmed air.

GASOLINE AND AIR PROPORTION

Milwaukee, Wis.—Editor Motor Age—Could Motor Age advise me what the proportion of air is to gasoline gas to form a correct explosive mixture?—Robert R. Schoof.

The majority of makers aim at getting a combination of fifteen parts air and one part gasoline. The majority of laboratory tests show that with a dense atmosphere one part of gasoline vapor with fifteen parts of air is a good mixture, due to the greater percent of oxygen in the atmosphere under such conditions. With a dry atmosphere a twelve-to-one proportion generally gives best results. The exact ratio of this proportion depends also upon the specific gravity of the gasoline. Gasoline bought in bulk at the present time runs about 64, whereas, in many parts of the country where it is shipped in barrels it rarely tests higher than 60½ and 61. These various conditions of specific gravity and density of atmosphere must be considered in determining the percentage of air and vapor in a gasoline mixture.

MOTORISTS' ROAD RULES

Walnut, Iowa—Editor Motor Age—One of our country papers has, for the convenience of motorists in its locality, published a code of rules which may be of interest to Motor Age readers and which are given herewith.—A. A. Linfor.

1—On discovering an approaching team, the motorist must stop and cover his machine with a tarpaulin painted to correspond with the surrounding scenery.

2—The speed limit will be secret and the penalty for violation will be $10 for every mile an offender is caught going in excess of it.

3—In case a motor car makes a team run away the penalty shall be $100 for the first mile the team runs, $200 for the second mile, $300 for the third, and so on.

4—On approaching a corner where he cannot command a view of the road the motorist must stop not less than 100 yards from the turn, toot his horn, ring a bell, fire a revolver, halloo and send up three rockets at intervals of 5 minutes.

5—Motor cars must be seasonably painted so they will merge with the landscape. They must be green in autumn and white in winter.

6—Motor cars running on the country roads at night must send up a red rocket every mile, and wait 10 minutes for the road to clear, then proceed carefully, blowing their horns and shooting Roman candles.

7—In case a horse refuses to pass a motor car in spite of all the precautions that have been taken the motorist will take his machine to pieces as rapidly as possible and conceal the parts in the grass.

8—In case the roads are dusty the owner of a motor car shall slow down to 1 mile an hour when approaching a house and send a man ahead with a sprinkler to lay the dust—Treynor Record.

HAS DEVELOPED ALCOHOL MOTOR

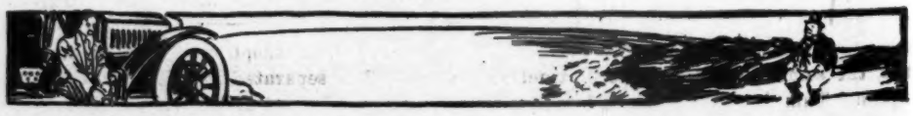
Syracuse, N. Y.—Editor Motor Age—With a view of investigating the merits of the alcohol motor, our engineering force, under the direction of Head Engineer Wilkinson, has conducted continued tests with this type of motor. At first the results obtained from these experiments with the alcohol motor in the laboratories at the Franklin factory did not warrant the belief that there was an immediate future for the alcohol motor. It was stated, however, that the engineers had not finished their work and that they were experimenting, with the possibility that the problem would finally be solved. At that time it was pointed out that even if alcohol and gasoline could be purchased at the same price per gallon the gasoline motor would be the most economical for the reason that there was a great deal more energy in a given amount of gasoline than in a given amount of alcohol. Now our engineers have so far perfected the alcohol motor that it is, size for size, as powerful as a gasoline motor. The former tests were with a regular gasoline motor converted to use alcohol. Under the knowledge gained by these experiments the Franklin engineers designed and built from the ground up a motor adapted to alcohol use. Much to their satisfaction this motor is thoroughly practical in every respect for motor car use. Only 90 pounds compression is used as against 150 pounds used by the United States government in its tests, and the results equal the results of the government tests. Compression above 90 pounds is hardly practicable for motor car motors. With this improved motor alcohol is as economical to use as gasoline with both at the same price per gallon. This motor shows a consumption of alcohol per brake horsepower hour of about 1.05 pounds. There is every reason to believe that the price of alcohol will be reduced gradually, so that the alcohol motor is certainly going to play a very important part in the industry. The fact that alcohol is much safer than gasoline is greatly in its favor. Contrary to the prediction by eminent foreign experts, the alcohol produces no bad effect on the motor itself. These experts have expected that in process of combustion certain chemical compounds would result that would be detrimental to the working surface of a motor. Our engineers declare that not anything of this kind occurs.

The successful working out of the alcohol motor is an achievement of unusual importance. The problem has engaged the attention of the governments of France, Germany and the United States for some time, and the results of these government tests have been watched with a great deal of interest. The tests have been conducted exclusively with the Franklin air-cooled motor.—H. H. Franklin Mfg. Co.

MANUFACTURE DEMOUNTABLE RIM

Petersburg, Ill.—Editor Motor Age—Will Motor Age give me the names and addresses of concerns which make removable or dismountable rims?—L. D. Watkins.

The following concerns manufacture demountable rims: Diamond Rubber Co., Akron, O.; Fish Rubber Co., Chicopee Falls, Mass.; Goodrich Co., Akron, O.; Goodyear Tire & Rubber Co., Akron, O.; Hartford Rubber Works Co., Hartford, Conn.; Newmastic Tire Co., New York, N. Y.; Republic Rubber Co., Youngstown, O.; Trident Tire Co., New York, N. Y.; American Auto Rim Co., New York, N. Y.; Continental Caoutchouc Co., New York, N. Y.; Crescent Parts Co., New York, N. Y.; Firestone Tire & Rubber Co., Akron, O.; Hartford Suspension Co., New York, N. Y.; Healy Leather Tire Co., New York, N. Y.; Michelin Tire Co., Milltown, N. J.; Presto Detachable Rim Co., Jersey City, N. J.; Nadall Mfg. Co., Chicago, Ill.



MAKE SMALL CARS

Council Bluffs, Ia.—Editor Motor Age—Please give the names of motor car concerns making two-cylinder five-passenger touring cars listed at $1,250 or less; also four-cylinder touring car listed at $2,000 or less.—R. F. S.

Some five-passenger two-cylinder cars, listed at $1,250 or less, are the following: Buick, built by the Buick Motor Co., Flint, Mich.; Jackson, Jackson Automobile Co., Jackson, Mich.; Moline, by the Moline Automobile Co., East Moline, Ill.; Reo, by Reo Motor Car Co., Lansing, Mich. Some of the four-cylinder touring cars selling for less than $2,000 are the Dragon, built by the Dragon Automobile Co., Philadelphia, Pa.; Mitchell, by Mitchell Motor Car Co., Racine, Wis.; Waltham, by Waltham Mfg. Co., Waltham, Mass.; Selden, by Selden Motor Vehicle Co., Rochester, N. Y.; Oldsmobile, by Olds Motor Works, Lansing, Mich.; Cadillac, by Cadillac Motor Car Co., Detroit, Mich.; Kisselkar, by Kissel Motor Car Co., Hartford, Wis.

REAR MOTOR FOR IDEAL CAR

East Chicago, Ind.—Editor Motor Age—Have just read, in the Motor Age, with interest John Grilly Cole's idea as to the future ideal car, have also read previous discussions on the same subject. Kindly permit me to now have my say, which I will make brief and upon one point only—that of the motor location. I think the future ideal car should not have its motor in front, but that it should be placed at the rear, where it rightly and properly belongs—never in front. I will only mention a few of the many reasons why the motor in a properly designed, practical car must be in the rear. The motor in front, as now, places by far the greater part of the load on the front truck; especially is this true if the rear seat is unoccupied. With this great overload in front it is not to be wondered that the car at the least pretext turns turtle, injuring or killing its occupants. The forward wheels should have only the lighter part of the load, they merely being the guiders of the car, the same as the little guiding wheels on locomotives or traction engines. By far the greater part of the load belongs on the rear truck, as the rear wheels are the drivers, therefore they must have the heavy part of the load to give them firm service bearing, it giving them the needed traction to prevent the wheels slipping around and not propelling the car. The proper proportion of the load on the rear wheels dispenses with the tire chains now used, which are so deadly to the rubber tires and on roadways, with a heavy rear load, the car will then have proper traction, the same as a locomotive or traction engine. This is accomplished by simply putting the motor at the rear, which in every respect is the best; in fact, the only proper place for it. The transmission devices are easier to locate and the motor can be placed low and crosswise, and if a vertical one, the cylinders downward, so the draft through under the body strikes the motor cylinders full force, giving the very best possible cooling place, with the noise and smell behind the passengers. With the motor placed at the rear, permitting the seats to be placed a bit ahead it removes the rear seat from its very undesirable location, that of its being humped up back over the rear axle. The seats are then placed between the four wheels, where they belong for comfortable riding. The motor at the rear can be easily housed, yet it and the machinery are readily accessible. The motor in the rear does away with the unsightly dog-house front, which scares the horses. Make the front inviting in appearance by placing there a dust-proof case of proper design for luggage capacity, which Mr. Cole says might be embodied in the future ideal car.—A. Wickey.

LOCAL CASEHARDENING

New York City—Editor Motor Age—One way to protect certain parts of a steel piece, in such as a camshaft, from carbonizing in the casehardening box is to plaster them with clay. Another way is to electroplate them with copper. To do the latter without plating the entire piece, the portions which it is desired to harden, such as the cams, are warmed and painted with paraffin wax, or are japanned and the japan baked on. If wax is used, it must be melted and washed off with gasoline after plating and before baking. The japan comes off of itself in the carbonizing box.—H. Towle.

NAPTHA AND GASOLINE

Milford, N. H.—Editor Motor Age—What is the difference between naphtha at 74 degrees and gasoline at 68 degrees? Would naphtha testing 74 degrees be all right to use in a motor car, and would I realize any more power than using gasoline testing 64 to 68 degrees?—Subscriber.

In this country, naphtha is merely a trade name as commonly used and where called for in the ordinary course of affairs, the substance supplied is naphtha, gasoline or benzine, as the tradesman happens to designate it. Originally the term was employed to indicate one of the lighter distillates of petroleum, and is only distinguished by the difference in density or specific gravity. It is not a totally different substance, though there appears to be a popular misconception on this point. Crude oil is separated into its components by means of what is known as factional distillation, the temperature being controlled during the process in order that the various substances may be evaporated consecutively in the order of their densities. Professor C. E. Lucke classifies petroleum distillates as follows: Petroleum ether, 85 to 80 degrees Baumé; galosine, 80-78 degrees; naphtha, three grades being enumerated, 78-60 degrees Baumé. Then comes kerosene, and next lubricating oils. The Baumé scale must not be confused with specific gravity, as it is so commonly done, 80 degrees gasoline having a specific gravity of 0.66. Garage men and supply dealers commonly regard these terms as interchangeable, consequently what they offer as "72 or 74 gasoline" may, in reality, be something not far from kerosene, the specific gravity of which is 0.753, or higher, but the density of which ranges from 56 to 32 degrees Baumé. It is a matter of common knowledge that the refiners no longer find it profitable to attempt to market the lighter distillates, owing to the very small quantity contained in crude oil. Hence, there is very little fuel to be had on the market at present lighter than 64 to 68 degrees Baumé, or 0.70 to 0.72 specific gravity. This will answer your query regarding the difference between gasoline and naphtha. The difference in the fuel values of the different distillates ascends as they get heavier, kerosene being credited with a slightly greater number of heat units per pound than gasoline, but the heavy liquids are not as available, as they do not vaporize as readily. A slight adjustment of the carbureter may be necessary to take care of the difference in fuels, but this is not ordinarily the case except where maximum economy is aimed at, so that you will find practically no difference in the action of the motor on the fuels you mention.

STOPS "JOY RIDING"

Youngstown, O.—Editor Motor Age—I find the following a very effective way of preventing my 1907 Stoddard-Dayton being used without my permission. I cut an electric snap-switch in on the ground wire to the commutator and fasten the switch to the dashboard under the hood. Then by simply turning off the switch, putting down the hood, and fastening it, and locking a padlock through the fasteners, one on each side, the car is effectually locked, and yet it can be moved around the garage, as is sometimes necessary. My car was used for an all-night "joy ride" last summer while I was in New York. Hence the above scheme to prevent a repetition of the offense.—C. A. Cochran.

WANT MOTOR CYCLE NEWS

Poughkeepsie, N. Y.—Editor Motor Age—I am a subscriber to Motor Age and saw H. A. Medcalf's letter in the Readers' Clearing House of May 14. I am a motor cycle rider and think as Mr. Medcalf does that there are other subscribers who would like to have news of them published in Motor Age.—Harry W. English.

TESTING THE VARIOUS MOTOR CAR FUELS

THE HEXANE, heptane, and octane lines on figures 1 and 2—part I—show the composition of the different fuels represented by the curves. They show it roughly only, because certain fuels contain other hydro-carbons than those of the paraffin series. Paraffin is represented by the extreme right-hand curve in figure 1, this curve showing only the lightest fractions. It starts really with decane, tetradecane being roughly the average constituent.

There are two curves of benzol fuel—the benzol supplied by the South Metropolitan Gas Co., and coaline, a spirit made by the Coalite company. I have no knowledge of what these benzols consist, but ordinary benzol is mainly benzene, C_6H_6, with a certain amount of toluene, C_7H_8, and sometimes some xylene, C_8H_{10}. The properties of all these substances are given in Table I—Part I.

Benzene and Benzine

I might here call attention to the confusion that often arises between "benzene" and "benzine." Benzene is a definite hydrocarbon, with formula C_6H_6, and is a coal-tar product. Benzine is a popular name for a certain class of spirit distilled from petroleum, and both names are frequently used for benzol or a mixture of benzene and other coal-tar spirits.

A comparison of the benzol fuel curves with the pure benzene curve shows to what extent they consist of benzene. The benzol of the South Metropolitan Gas Co. has approximately the boiling point of benzene for about three-quarters of its volume, and then the boiling point rises to that of toluene, viz., 111 degrees.

The gasoline curves all show the presence of pentane, hexane, heptane, and octane, or hydrocarbons of other series with corresponding boiling points, except two—Bowley's special spirit and Carless, the latter showing only a very little octane. Several reach a higher boiling point than that of octane, and one, the mixture of gasoline and shale oil, contains a thick dark brown residue having a boiling point of 273 degrees Centigrade. The fact that it is possible to burn paraffin in most engines once they are hot and once the carbureter conditions are right shows that the heavy portions to be found in most gasolines may be completely utilized, but there is little doubt that when the engine is cold and the conditions not quite right that they are the portions which go to form deposit in the cylinders of the motor using it.

Boiling Point Curves

In dealing with the gasolines, the boiling point curves give a very fair idea of the readiness with which they evaporate in spite of the fact that different gasolines are composed to some extent of different kinds of hydrocarbons. But the boiling-point curve is no guide at all for entirely

Editor's Note—Paper read by G. H. Baillie before the Royal Automobile Club of Great Britain on May 14, 1908 Part II. Part I appeared in last week's issue.

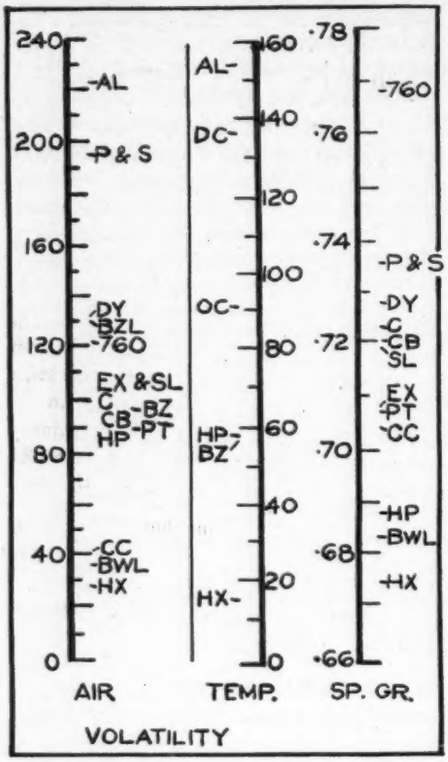


FIG. 4

different fuels. Alcohol is an example of this. The boiling point of alcohol is lower than that of benzol, but an engine starts and runs quite easily on benzol, and is almost impossible to start, and not easy to run on alcohol. This is sufficient to show that the boiling point is no real indication of the quality one wants in a fuel.

The Vaporization Problem

The whole question of vaporization of fuel has been worked out by Sorel in his book on "Carburation in Alcohol Motors." As I have never seen any translation into English of his book, and as his results are extremely interesting, I propose to indicate briefly his method of tackling the question, changing to some extent the form in which he gives his results and bringing his figures more up to date.

The first thing to find out is the minimum temperature at which it is possible for a fuel to exist as vapor under normal atmospheric pressure. This is obtained from the vapor-tension curve of the fuel, which is a curve giving the minimum temperature at which the vapor has a certain pressure. The pressure of the vapor in the mixture depends on the proportions of the mixture, and can be calculated from the equation:

$$p = \frac{760}{1+V\delta'}$$

where p is the pressure of the vapor, V is the volume of air in cubic meters which is mixed with 1 kilogram of fuel, and δ is the density of the vapor of the fuel at normal temperature and pressure. From this equation and from the vapor-tension curves I have worked out the minimum temperature at which different pure fuels can exist as vapor. As it has been found that the best results are obtained in an engine when the mixture contains about 30 per cent more air than the quantity theoretically sufficient to completely burn the fuel, I have worked out the results for four mixtures—that containing the right amount of air theoretically, and those with 20 per cent less, 20 per cent more, and 40 per cent more air. The figures are given in Table II.

TABLE II—MINIMUM TEMPERATURES AT WHICH FUEL CAN EXIST AS VAPOR

Air	20% less	Right amount	20% more	40% more
Hexane	−14.2	−17.7	−20.6	−24.2
Heptane	7.3	3.6	0.7	2.0
Octane	22.9	19.0	16.0	13.0
Decane	46.1	42.0	39.0	36.5
Benzene	−0.7	−4.3	−6.9	−8.3
Ethyl alcohol..	26.5	23.3	20.7	17.8

From this it appears that octane, decane and alcohol cannot exist as vapor under ordinary atmospheric conditions except in very weak mixtures. The large difference between benzene and alcohol accounts for some of the difficulty in using the latter as compared with the former in an engine. But if these fuels were mixed with the air in the form of liquid at these temperatures they would not vaporize completely, for in evaporating they reduce the temperature. The fall in temperature due to evaporation can be calculated from the latent heats of the fuel and the specific heat of the air. Table III gives the drop in temperature for the same fuels.

TABLE III—DROP IN TEMPERATURE DUE TO EVAPORATION

Air	20% less	Right amount	20% more	40% more
Hexane	23.3	19.0	16.3	14.2
Heptane	22.4	17.9	15.0	12.8
Octane	21.5	17.2	14.3	12.3
Decane	18.5	14.8	12.4	10.6
Benzene	47.3	32.2	23.5	20.9
Ethyl alcohol..	95.5	76.3	63.7	54.6

Here, again, alcohol in evaporating lowers the temperature twice as much as benzene does. Benzene, too, which, according to Table II, can vaporize at about the same temperature as heptane, produces twice as big a drop in temperature as heptane does.

If the figures in Tables II and III be added together the result gives the minimum temperature which the air must have before the fuel is evaporated in order to completely evaporate it. Table IV gives these temperatures.

TABLE IV—MINIMUM TEMPERATURE OF AIR BEFORE EVAPORATION

Air	20% less	Right amount	20% more	40% more
Hexane	9.1	1.3	−4.3	−10.0
Heptane	29.7	21.5	15.7	10.8
Octane	44.4	36.2	30.3	25.3
Decane	64.6	56.8	51.4	47.1
Benzene	46.6	27.9	16.6	12.6
Ethyl alcohol..	122.0	99.6	84.4	72.4

Figure 5 shows the curves obtained from this apparatus for all the fuels I could get hold of. The abscissæ represent the percentage of fuel evaporated and the ordinates represent the number of strokes of the bellows, or, what amounts to the same thing, the amount of air blown through the gasoline.

Three pure fuels have been tried in the apparatus—hexane, heptane and ethyl alcohol. An absolutely pure fuel will, of course, show as a straight line on these curves, because every portion of it is the same and requires the same amount of air to evaporate it. The crosses show the points obtained for heptane, and the line is ruled straight through them up to 95 per cent of the total volume. The closeness of all the points to the straight line shows that the method is as accurate as is needed for this kind of work. In the last 5 per cent the line bends upwards. This may be due to some impurity in the heptane, but it may also be due to the fact that in the actual apparatus used in the tests the air did not get very thoroughly mixed with the fuel when there was only a small quantity of this left.

The two lightest gasolines on the market are Bowley's Special and Carless; some way above these come a group of well-known spirits — Carburine, Pratt, Giant, Shell, and Express. The two latter have a single curve representing them, the points representing the readings being crosses for Express and circles for Shell. All the points coincide within the limits of accuracy of the method. Above these come the .760 Spirit, and above this Dynol. In the mixture of gasoline and shale oil, the gasoline and the shale oil seem to evaporate one after the other. Up to 85 per cent the curve is much the same as the ordinary gasoline, then the shale oil begins to show and no amount of blowing would get off the last 5 per cent. The benzol curve is a straight line up to 80 per cent, and then the toluene makes it bend upwards.

Figure 6 is a series of curves derived from the curves of figure 5. The abscissæ are successive twentieths of the total volume, and the ordinates are the strokes of the bellows, or quantity of air required to evaporate each successive twentieth—not, as in figure 5, the quantity of air required to evaporate all the volume up to the twentieth considered. The ordinates therefore represent, one may say, the volatility of each twentieth of the fuel; the fuel being less volatile the higher the ordinate.

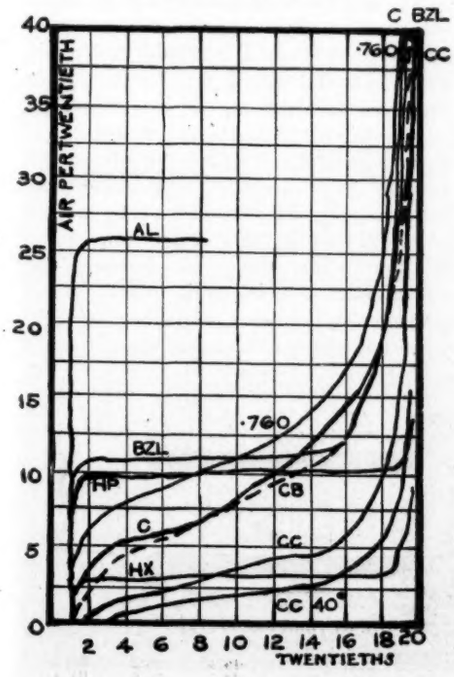
In figure 6, therefore, the pure fuels are horizontal straight lines, showing constant volatility throughout, and the curves have the same characteristics as the boiling-point curves of figure 1. Benzol and heptane have much the same volatility, alcohol being far less volatile. Carburine, Pratt, Giant, Shell, and Express have much the same volatility in their middle portions; 760 Spirit is less volatile over these portions, but the final portions are not far different from those of the lighter spirits. The shale oil in the gasoline and shale oil shows up well in the curve.

To get figures representing the volatility of these fuels, I have taken the total number of strokes required to evaporate the whole amount of fuel excepting the first and last twentieth. I have omitted the first twentieth because the very light spirit which comes off in it is harmful rather than beneficial, and I have omitted the last twentieth because its evaporation is not done so efficiently, and, in several cases, cannot be done at all. The values obtained in this way are shown in figure 4, where the vertical scale represents the number of strokes of the bellows, or the quantity of air required to evaporate from the second to the nineteenth twentieth, the name of each fuel being written in the position it occupies on the scale. This scale, as does the scale of temperature obtained theoretically, represents to some extent the relative volatility, or, perhaps, one should say, non-volatility of the fuels, and, to make a comparison of the theoretical and experimental results, I have put zero air at the same level as zero temperature and adjusted the scales so that heptane is on the same level in both. Hexane and alcohol are then in very closely corresponding positions on the two scales, and the two positions of benzene are not far off. I think, then, one may conclude that the apparatus gives a very fair idea of the volatility of a fuel, quite apart from its composition or nature, and does it under conditions not far different from those actually occurring in practice.

I have tested the effect of temperature on the evaporation of the fuels by passing the air through a heated tube and measuring its temperature just before entering the apparatus, keeping also the water bath around the gasoline tube at the same temperature. The lowest curve in figure 6 is that for Carless at 40.6 degrees Centigrade, the higher curve for Carless being 9.75 degrees. The temperature coefficient remains fairly constant throughout the curve and lowers the curves about 1½ per cent for every degree rise of temperature. The total strokes also are diminished by 1½ per cent for every degree rise of temperature.

Of course, the amount of air for evaporation cannot be regarded as a measure of the quality of a fuel, for it would be obviously absurd, for instance, to regard Carless as twice as good a fuel as Carburine. If an engine will run quite satisfactorily on Carburine it cannot do more than that on Carless. But if Carburine gives a little deposit, Carless should give none or less, and fuel higher in the scale than Carburine might be expected to give more. In the case of a new fuel being put on the market the evaporation test would enable the volatility to be compared with that of the older gasolines of known properties, and a value could be got at once placed on it in this respect.

If the test should turn out to be of any practical service different apparatus could be standardized by making an evaporation test of heptane, which can be procured cheaply in a fairly pure state, and, by thus establishing a coefficient belonging to each apparatus, the readings of different apparatus could be made compar able without difficulty.



Ex & Sl—Express & Shell	HX—Hexane
AL—Ethyl Alcohol	NN—Nonane
BZ—Benzine	P & S—Petr & Shale
CLN—Coaline	CB—Carburine
DY—Dynol	PT—Pratt
G—Giant	CC—Carless
BWL—Bowley Spec	OC—Octane
BZL—Benzol	PN—Pentane
HP—Heptane	PR—Parrafine

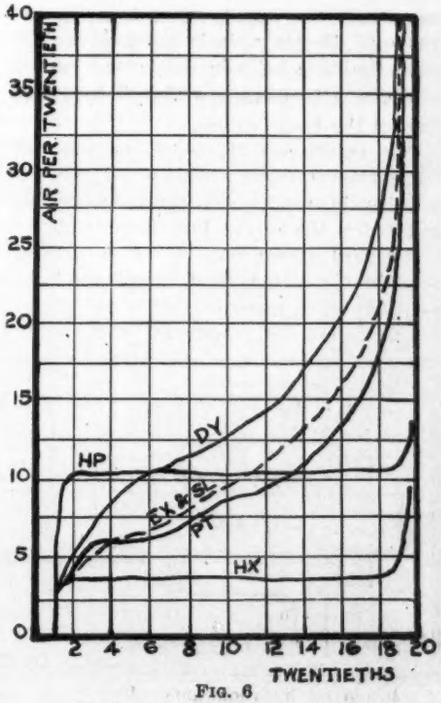


FIG. 6

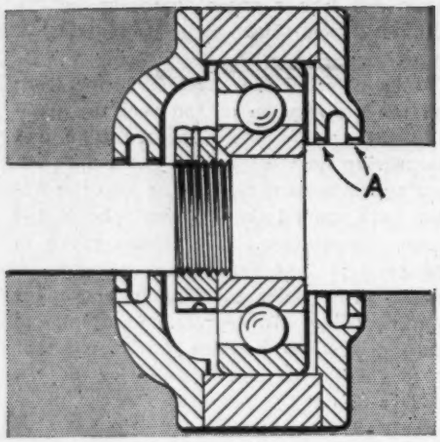


FIG. 10

groove leading back into the gearbox. This would cause the stuffing box to force the surplus oil clinging to the rod back into the groove, which would call for only a slight pressure and a moderately tight stuffing.

A ball-bearing hub may be protected at its inner end from ingress of water, when the car is washed down, either by the double shoulders shown in figure 10 or by a suitably disposed felt washer. The precise arrangement will depend on the details of construction; but it is well to use a washer of wide radial surface subjected to moderate pressure, as it will wear longer than one of narrow surface under considerable pressure.

Rear axles other than those of the floating type are apt to throw oil from their ends adjacent to the wheels when the casing containing the bevel gears and differential is filled too full; and the oil thus escaping is likely to enter the brake drums and temporarily destroy the holding power of the brakes. Since this is an accidental occurrence it hardly calls for special treatment; the remedy is to learn to use less oil. However, it is possible to drill small drainage holes in the bottom of the axle sleeve to discharge the oil before it reaches the brake drums.

The rapidity with which unprotected propellershaft joints wear has led to much activity in producing dustproof joints, and today the owner has little to do in this regard except possibly to be careful that, in his zeal against dripping oil, he does not use grease so stiff that it will not flow. As the movement of the parts of a universal joint is oscillating instead of rotating, there is very little inducement to the lubricant to enter between the surfaces under pressure. Oil will enter a capillary attraction, but grease, unless it is made fluid by the heating of the bearing parts, will stay out because there is no motion or pressure to work it in. Since some viscosity is desirable owing to the high pressures, a thin mixture of oil and grease, with a little graphite added, should be suitable for the majority of cases of this nature.

What Causes Pre-ignition

If the inside surfaces of the combustion chamber are free from sharp corners or projections formed in casting pre-ignition is probably due to the combined influences of high compression and carbon or dirt on the piston head. Next to the exhaust valve itself the piston head is the hottest part of the engine, since it cannot be water cooled. For this reason it is much more important to keep the piston head clean than the other surfaces exposed to flame, and this is best accomplished, first, by the use of a good non-carbonizing oil, and, second, by thoroughly screening the air intake. If pre-ignition is troublesome it will pay to fit a dust screen underneath the engine in case none is already provided, since whatever dust touches the piston head will be held there by the oil and will be fully as effective in causing pre-ignition as the same amount of carbon. The intake itself should draw air through at least one and preferably two or more fine wire gauze screens of sufficiently large area to permit the air to pass through them slowly. These screens should be removable and should be inspected and cleaned with gasoline and a toothbrush as often as may be necessary. It will be found that the fitting of a suitable dust screen beneath will make an immense difference in the amount of cleaning which the gauze screens require. In the manufacture of high classed motor cars the greatest care is taken in scraping the walls and dome of the cylinder castings forming the combustion space, the aim being to remove every projection that might cause a pre-ignition point as also to remove every burr or rough spot to which foreign matter would adhere. The lubrication system of a car is a most important factor in the elimination of preignition due to the proper amount of oil being fed to the cylinders at all times.

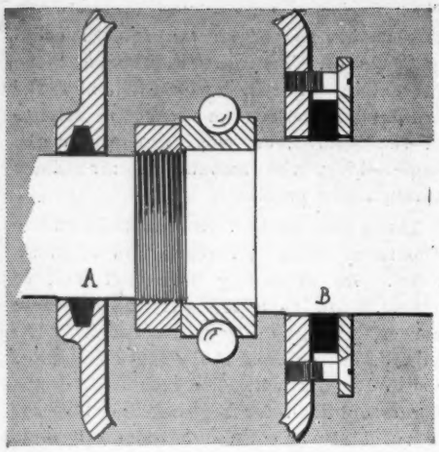


FIG. 11

If the housing of a steering gear is closed in by a bottom cap, and is packed with semi-fluid grease, it ought to run a season without attention and without leaking. Steering knuckle pivots are doubtless best oiled every day from a squirt can, but the joints at the end of the links should be packed in very thin grease and enclosed in leather boots. Ordinary grease is utterly useless, and a squirt can is not much better.

As for the multitudinous small bearings about the car, the best that can be done is to put dust caps on them wherever possible, and wipe them clean after each oiling. They require only a little oil, and if they are oiled once or twice a week it is usually ample. The main thing is to keep them free from dust, since the dust draws away the oil by absorption and leaves the bearings dry. It is only the force of custom that has made us associate roadside work on motor cars with hopelessly grimy hands and smeared faces. The car of the future will be a clean car inside as well as outside, and with a duster and a pair of gloves no owner will be afraid to drive it, even to most sorts of social affairs. The excessive secretion of oil from bearings on cars has led in one or two foreign countries to regulations calling for excessively complex and carefully made underpans, which regulations seem to be poor in view of the nature of the trouble. The proper solution is the prevention of grease and oil leaking from bearings, which can be accomplished by good construction.

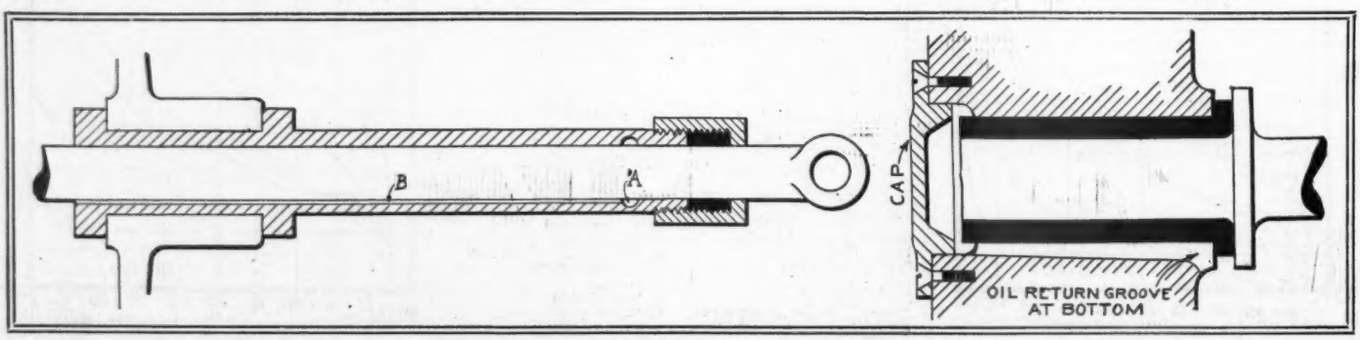


FIG. 12

FIG. 12

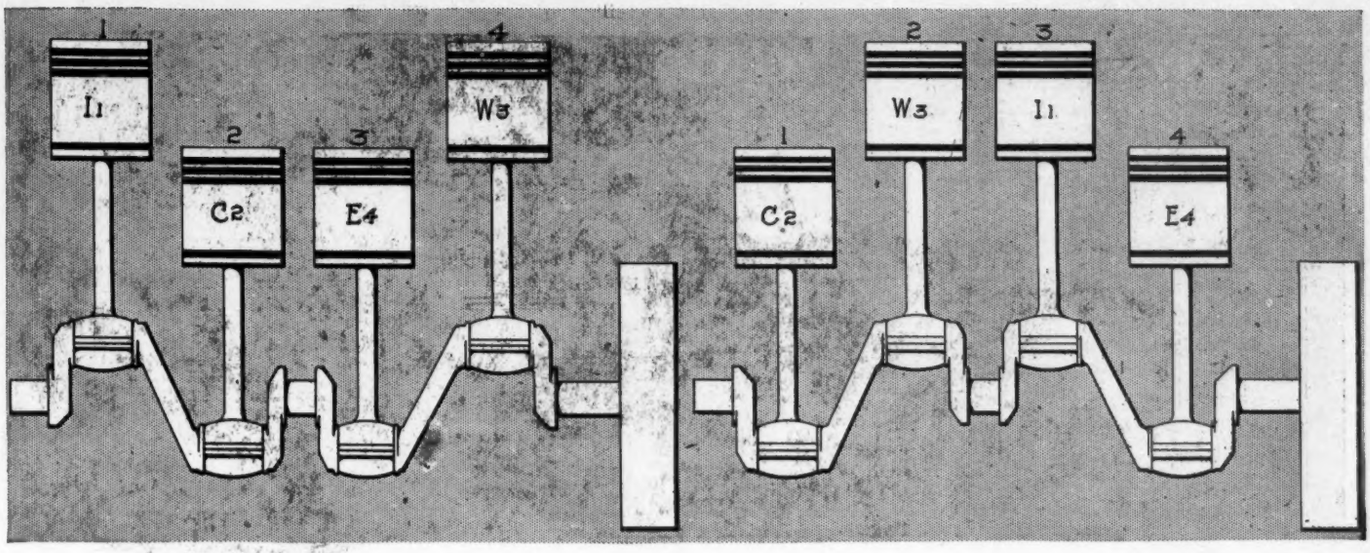


DIAGRAM 1

DIAGRAM 2

Order of Cylinder Firing

THERE is nothing more confusing to many motorists—not only to the beginner, but to many who are proficient in the general care and operation of their motor cars—than the relative various positions, in a four-cycle engine, of the four pistons on any of their four cycles of compression, work — explosion — and exhaust, this being the order of the cycles.

In the following diagrams the pistons are shown as they are usually placed in relation to one another. That is, pistons 1 and 4 are at the top of their strokes when pistons 2 and 3 are at the bottom, and, obviously, vice versa. The figures over the pistons in each diagram represent their order of number, counting from either end of the engine.

In diagram 1 cylinder I is ready to descend on its intake stroke—having finished its exhaust stroke—and cylinder 4 is ready to descend on its working stroke —having finished its compression stroke. Cylinders 2 and 3 are ready to move on their up strokes, No. 2 on its compression, having finished its intake, and No. 3 on its exhaust, having finished its working stroke. The results are that the pistons are brought into these positions of diagram 2. This means that cylinder No. 1, having completed its intake downward stroke, is ready for its compression up stroke; No. 2 has moved up on compression and is ready to go down on work; No. 3 has finished exhausting and is ready for intake and No. 4 has finished the work stroke and is ready to move up on exhaust. Piston No. 2, having completed and by virtue of its work stroke, the pistons are brought back to the positions shown in the first diagram, but with an altered condition of the cycle represented by each, as shown in diagram 3. The pistons are now ready to move to the positions shown in diagram 2, with an altered cycle condition. Cylinder No. 1 moves down on work; No. 2 up on exhaust; No. 3 up on compression and No. 4 down on intake, giving diagram 4.

When the cycle of each has been completed, from the above starting points of No. 1, exhaust; No. 2 intake; No. 3, work, and No. 4, compression, the pistons are then back not only in the position of diagram 1 but with the same condition of cycles.

This explanation has been in the order of the cylinder numbers, but the effect of each cycle of each cylinder will be easier traced if it be remembered that the order in which the cylinders work is: Cylinder 1, then cylinder 3, then cylinder 4, and then cylinder 2, and then repeat indefinitely. From this and the above diagrams it will be easily understood that as piston No. 1 goes down on its work stroke, No. 3 comes up on compression stroke, and is then ready for the work, which is a down stroke bringing No. 4 up on compression. No. 4 then goes down on work and brings No. 2 up on compression, then it goes down on work and brings No. 1 up on compression for the repeating of cycles. This shows that each synchronized pair, 1-4 and 2-3, always have one cycle between them as they move together, either up or down.

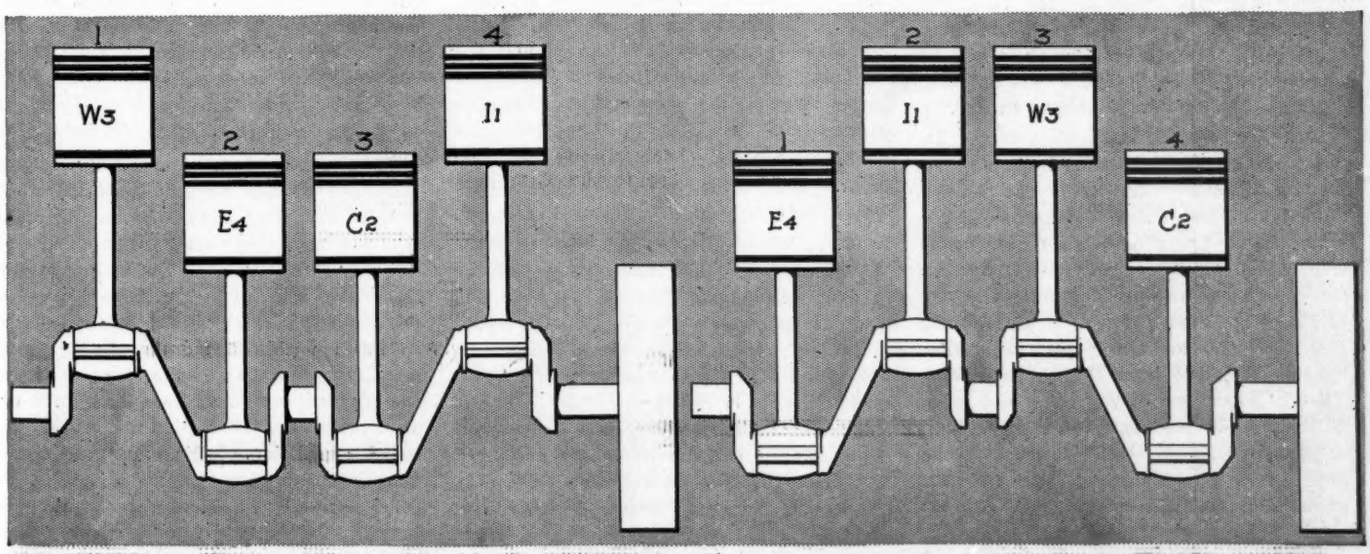
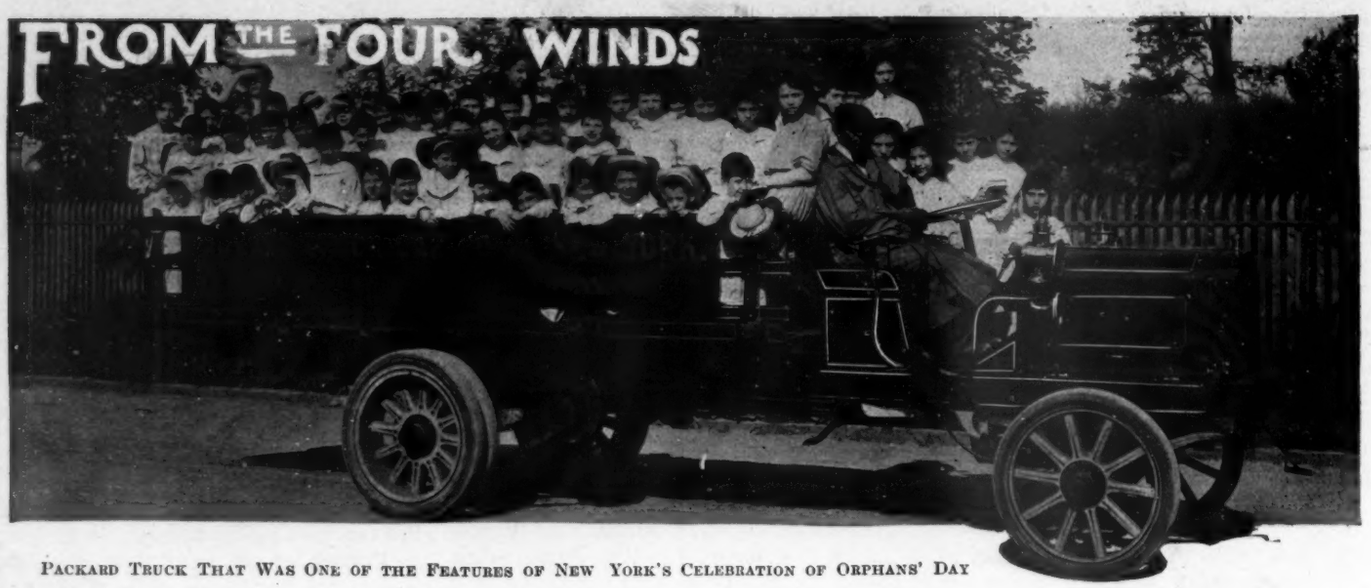


DIAGRAM 3

DIAGRAM 4

FROM THE FOUR WINDS



PACKARD TRUCK THAT WAS ONE OF THE FEATURES OF NEW YORK'S CELEBRATION OF ORPHANS' DAY

Coast Election—The California State Automobile Association has elected the following officers for the coming year: President, L. P. Lowe; vice-president, S. G. Buckbee; treasurer, R. M. Hotaling; secretary, Oscar Cooper.

Car for Road Commissioner—A. R. Hoard, highways commissioner of Jefferson county, Wisconsin, under the new state law, has purchased a Mitchell roadster to assist him in covering the extensive territory under his charge. Mr. Hoard is obliged to travel on the average of 100 miles a day to inspect all road work going on in his county.

Rockville Climb Big One—Judging from present indications, the first hill-climb of the newly-formed Automobile Club of Rockville, of Rockville, Conn., will be a lively event. The entries have been coming along in good shape and up to date a Simplex, Isotta, Stearns, Mercedes, Columbia, Pope-Hartford, Knox and big and little six Stevens have been promised. It is also expected that Bernin's Renault will appear and the chances are that the Thomas Flyer, Maxwell, Ford, Packard, Oldsmobile, Mitchell and Franklin will be represented. C. H. Gillette will officiate as referee and H. P. Maxim as starter.

Will Use Porter Hill—Porter hill, instead of Cady, will be used by the Cleveland Automobile Club this year for its annual hill-climb June 13, the new grade being found to be in much better condition, while the roads leading to it are also far superior to the other route. The new hill is in the same part of the state, being just over the boundary line in Medina county, 23 miles from the public square. The hill was surveyed and the grade found to average 15 per cent, the steepest part of it being 19 per cent. There is slight down grade at the starting tape, and then about 200 feet of level going. The main grade is then struck, and it is a case of pull all the way until the crest is mounted. After that there is 200 feet of 4 per cent grade to the finish line, providing an admirable finish. From start to finish the road is straight as a die. The events are now practically all filled, and every indication points to a most successful climb.

Club in Riverside, Cal.—The Riverside Automobile Club, of Riverside, Cal., has been formally organized with fifty-three members. Will S. Little, of the American Automobile Association and the California State Automobile Association, is the prime mover in the organization.

Bermuda Bars Motors—A distinct backward step has been taken by the colony of Bermuda in prohibiting the use of all motor cars in the colony. The law passed both houses of the legislature and on May 11 it received the signature of the governor and therefrom became effective. It will continue in force indefinitely.

Hartford Posting Signs—The sign post committee of the Automobile Club of Hartford will post the roads to Worcester through the towns of East Hartford, Manchester, Rockville and Stafford Springs. Along the Boston road from Palmer on the state of Massachusetts is repairing the highway which necessitates a detour in order to avoid the bad portions. For this reason the Stafford Springs route is favored by many. The committee will also sign post the various other routes throughout the state.

Great Western Wins—In reporting the hill-climb held under the auspices of the Albany Automobile Club on Menands hill, May 23 last, an error crept into the report which was published in Motor Age a few days later. In event 8, which was for gasoline touring cars up to $1,250, it was stated that the Cadillac was the winner. This was an error, as there was no car of this make entered in that event, the only contestant being a Great Western car, made by the Model Automobile Co., Peru, Ind., and which carried the number 12, and a Buick. The former won in 1:36, while the second entrant could not do better than 2:40. The Great Western bettered the times of several other cars ranging from $1,700 to $2,500, from 3 to 9 seconds.

Building County Roads—The county board of supervisors of Bayfield county, Wisconsin, has adopted the recommendations of the highways commissioner for a complete system of county highways. More than $10,000 has been raised to meet the cost of improvement. This is the first county in Wisconsin to push highway improvement on so elaborate a scale. The thoroughfares will be known as "county roads."

Wildwood's Carnival Plans—The Motor Club of Wildwood, N. J., is hard at work on the details of its 2-day carnival, July 3-4. A regularity run from Philadelphia to Wildwood will feature the first day, while a series of short-distance events on the splendid Central avenue speedway will be the piece de resistance of the resort's celebration of the glorious Fourth. There will be eight events. The Central avenue boulevard, where the dashes will be run off, has been considerably lengthened since last year, thus allowing ample room for a slow-down and enabling contestants to carry "all on" right up to the finish line.

On a Cheap Tour—Dr. A. H. Heaton, president of the Sedalia Auto Club, of Sedalia, Mo., who has started out to prove that touring Europe need not be expensive, but that it can be done for $4.68 per day, left Paris May 15 to be gone 6 months. Dr. Heaton says: "I expect to be back in Paris within 6 months, and judging from my short Paris experience, I expect the trip will cost much less than $4.68 per day. It is simply a pleasure and not a speed expedition. We expect to travel about 100 miles a day. This means a consumption of 4 gallons of gasoline. And here is how I divide up our expenses: Gasoline per day, 20 litres, 74 cents; lubricating oil, 10 cents; average room, one

person, 50 cents; average meals per day, one person, $1; garage, ours is a small machine, 10 cents; washing, 10 cents; insurance, 10 cents; total, $2.64. This leaves a margin of $2.04 for extras."

Gymkhana at Hartford—The Automobile Club of Hartford will hold gymkhana events at Charter Oak park on June 19 in connection with the Hartford hospital benefit. H. P. Maxim and C. H. Gillette have the matter in charge. It was at first intended to hold a series of track events on the historic Charter Oak track, but the course is now covered with clover and is in no condition for events of this nature.

Oldfield Will Not Quit—Barney Oldfield denies he will retire from the racing game. He has bought two Stearns cars, a four and a six, and intends to campaign around the country, giving exhibition races. He will drive at Boston June 17, and later at the track race at Minneapolis. Barney already has numerous dates booked, and expects to be busy all summer and late into the fall driving in various parts of the United States.

Fine Field of Entries—With the Great Chadwick, Matheson, Knox, Stoddard-Dayton, Pierce-Arrow, Pope-Toledo, Pullman, Rambler, Crawford, Mitchell, Pennsylvania, Acme, Ford, Apperson, White, Reo, Premier, Buick and Maxwell already entered, and with entries open for 2 weeks more, the Norristown Automobile Club looks forward to a record-breaking entry list for its hill-climb on Skippack hill, June 27. The hill will be subjected to the oil treatment, and fast time is assured.

Corbin a Winner at Albany—In the account of the very successful hill-climb held under the auspices of the Albany Automobile Club of Menands hill, May 23, mention of the event for runabouts ranging in price from $2,000 to $3,000 was inadvertently omitted altogether. The error was a great injustice to the Corbin, the winner in this class, as its time of 1:02⅕ was not alone much better than any of its competitors in this event, but also lowered the times of all but the first to finish in the $3,000-and-over runabout class, and all but the first and second to finish in the free-for-all runabouts, some of which contesting cars listed at $5,000 or over.

Arrange Tour Route—W. L. Hibbard and Oscar F. Fischedick, the special touring committee of the Milwaukee Automobile Club, have announced the final decision on the "going route" to Wausau, Wis., for the Wisconsin trophy tour on July 11 to 15, inclusive. The route and mileage are: Milwaukee to Menomonee Falls, 15 miles; to Meeker, 5; to Richfield, 3; to Ackerville, 5; to Schleisingerville, 2; to St. Lawrence, 4; to Addison, 4; to Nemo, 2; to Theresa, 6; to Lomira, 5; to Byron, 5; to Fond du Lac, 8; to Van Dyne, 8; to Black Wolf, 3½; to Oshkosh, 5; to Buttes des Mortes, 9; to Winchester, 6½; to Readfield, 8; to Gills, 5; to Weyauwega, 3; to Waupaca, 9; to Amherst, 15; to Stevens Point, 13; to Crockers' Lake, 10; to Knowlton, 5; to Mosinee, 5; to Schofield, 10; to Wausau, 4; total, 183 miles. The return route is still under consideration by the committee.

After Car Thieves—A movement is on foot for the organization in Denver of a car owners' association, whose principal function will be the employment of a force of special detectives to capture motor car thieves. Depredations of this sort, invariably resulting in finding the car in a damaged condition miles away on a country road, have been quite frequent recently, and owners have decided that the proposed plan is the only one by which the guilty parties can be captured and properly dealt with.

Medals for Perfect Scores—According to the original program, the winners of perfect scores in the recent Hartford endurance run were to receive certificates of merit. Albert M. Kohn, of the house committee of the Automobile Club of Hartford, who donated the bronze trophy which remains in the custody of the club for another year, will present, in the name of the club, each winner of a perfect score with a bronze medal or watch fob, on the face of which is to be reproduced a fac simile of the trophy itself.

Appointment Popular One—William E. McClintock, for many years chairman of the Massachusetts highway commission, has resigned to take a place on the commission appointed to govern Chelsea, Mass. Harold Parker, who has been a member of the highway commission for several years, has been appointed chairman. Colonel William D. Sohier has been given a position on the commission in place of Mr. McClintock. Colonel Sohier is a lawyer, well known in political circles, and he is the president of the Safe Roads Association, which he was instrumental in forming. As a member of the commission he will have more opportunity than ever to see that the highways of the state are made more safe for travelers who use the roads.

Giant Autometer on Road—Milwaukee was given an interesting demonstration of speed and speed limits in the latest style during the latter part of last week. A. S. Koto, assistant manager of the Warner Instrument Co., of Beloit, Wis., took the giant Autometer to Milwaukee before starting it on the usual trip east. Mr. Koto carried out a unique test. He induced Officer Henry Martens to get out his motor cycle, which Martens uses to run down speeders on upper Grand avenue, and test it against the big Autometer. Various speeds were used, the Warner machine driving alongside the motor cycle. Koto then took Martens down Grand avenue, and both ran alongside driving horses and carriages of the elite. Then Martens admitted that horses exceed the speed limit. Jason de Silve, of Chicago, who drove the big model through the east last season, is in charge again, and from Milwaukee he now is proceeding alone across the lake in a car ferry, and from Grand Haven will go through Michigan, Indiana and Ohio, whence it will be shipped to New York for the coast tour.

Poles Organize Club—The Polish Automobile Club, of Buffalo, has been organized. The club includes in its membership persons who are not owners of motor cars but who join in club trips through the courtesy of friends who own rigs. The president of the organization is Stanislaus Lipowicz. Several of the members recently took a run to Erie, Pa.

Pittsburg Erecting Signs—The Automobile Club of Pittsburg is having put up more than 200 road signs on the two roads from Pittsburg to Meadville, Pa. These are two of the most popular trips out of the Smoky city, as the grades are easy most of the way and the scenery is fine. The club has appropriated $500 for sign purposes and is also putting up a large number of guide marks on the road to Washington, Pa., which is mostly pike and is largely patronized. It is expected that another similar appropriation will be made this summer for the club members are enthusiastic over the success of their efforts in getting a sign law enacted.

Protest by Norristown—The Norristown Automobile Club, of Norristown, Pa., has protested against the granting of a sanction by the A. A. A. to the Monroe County Automobile Association on the ground of a conflict of dates. The Norristowners had applied for and been granted sanction for its Skippack hill climb on June 27, and the M. C. A. A. wants a permit for June 24-27 inclusive for its 4-day carnival. Some kind of a compromise will doubtless be arranged to enable cars which compete in the latter's climb, scheduled for the 26th, ample time to reach Norristown to participate in the events there. A switch in the program of the Monroe countians, whereby the two hill-climbs to be run off by them will take place on Thursday instead of Friday, has been suggested and will probably be agreed to by both clubs.

Annual Mitchell Outing—Owners of Mitchell cars will have their second annual jubilee at San Jose, Cal., on July 3 and 4. The affair will open on July 3 with the annual hill-climb. On Saturday, July 4, the party will leave San Jose for Del Monte, taking luncheon there at 2:30 in the afternoon. The Del Monte hotel management has offered special prizes for a time limit run around the 17-mile drive and the Mitchell Motor Car Co. has arranged for the regimental band from the Presidio at Monterey to play during the afternoon. G. Vernon Rogers, secretary of the Mitchell Motor Car Co., will go to the coast to perfect arrangements. Every Mitchell owner who can attend is invited to notify the company or some Mitchell agent. Each owner is permitted to invite enough guests to fill his car.

Among the Makers and Dealers

Howell With Jones—Alexander Howell, who has been representing the Warner Instrument Co. as chief New York salesman, has recently accepted a similar position with Jones Speedometer Co. in New York.

Pittsburg Concern Moves—The Union Auto Repair Co. of Pittsburg is now located at 6233-6235 Penn avenue, East End. Edwin C. Haus is manager of the concern and A. D. Griffin is his assistant.

Gilson With Goldberg—C. S. Gilson, formerly with the Packard company, has opened a New York branch for the Goldberg carbureter at 241-242 Thoroughfare building, Fifty-eighth street and Broadway.

New Concern in Binghamton—The Binghamton, N. Y., Automobile Vending Machine Co., of Binghamton, N. Y., has been incorporated with a capital of $20,000. The directors are: Edward Yilleson, Daniel Eryck and Charles Ahern, all of Binghamton.

Another Reo Dividend—The Reo Motor Car Co. has just declared another cash dividend of 40 per cent. This is the second of the year, the first of 20 per cent having been paid on April 18. This makes a total of $600,000 paid in dividends so far this year on capital stock of $1,000,000. The company is now turning out thirty cars daily, it is said.

Alderman-Salesman Changes—William C. Clark, councilman from the Fourth ward, Toledo, who has been sales agent for the Pope-Toledo Motor Car Co., has resigned his position with that company to become state representative of the Cameron Car Co., of Brockton and Beverly, Mass. He will remain in Toledo and continue his official duties on the city council.

Cancels Distributing Deal—The National Motor Vehicle Co. announces it has canceled its distributor's arrangements with the Ralph Temple Automobile Co., of Chicago, which has handled the National line for several seasons past. So far, the company says, it has made no new arrangements for representation in Chicago, but probably will do so in the near future.

Election in Boston—The Boston Automobile Dealers' Association held its annual meeting and the election of officers resulted as follows: J. H. MacAlman, of the Columbia, president; Josiah S. Hathaway, White, vice president; Arthur T. Hincheliffe, Winton, treasurer; Chester I. Campbell, clerk. The directors chosen were: J. W. Maguire, Pierce; A. P. Underhill, Knox; G. H. Lowe, Crawford; C. E. Fay, Ford; E. A. Gilmore, Thomas; C. F. Whitney, Berliet and Stoddard Dayton. The members were all unanimous on the date for the next show, which will be held at the same time as in past years, March. Already a number of applications for space have been received but these will not be acted upon until fall. Mr. Campbell, who has so ably managed the shows in previous years, will be in charge of the one next year.

Barnes Shifts—Claire L. Barnes, sales manager of the Detroit Steel Products Co., of Detroit, Mich., has tendered his resignation, to take effect in the near future, and will become manager of sales for the Billings & Spencer Co., of Hartford, Conn. Mr. Barnes has had charge of the sales department of the Detroit Steel Products Co. since the organization of the company.

Will Make Engines—The Dau-Marsch Co. has been incorporated at Charleston, W. Va., with a capital of $125,000 by Augustus E. Schmidt, James F. McNaul and H. N. Dauler of Pittsburg, and William Martin and William J. Shaw of Bellevue, Pa. The company proposes to deal in internal combustion engines for motor cars and will have its headquarters in Pittsburg.

Branch Must Move—After litigation covering more than a year the Locomobile branch in Boston finds that it will probably have to move from the handsome new quarters built for it on Newbury street near Massachusetts avenue. The building was erected by Eugene Foss, a Boston millionaire, and it is one of the finest of its kind anywhere. When he began to build it some of the owners of property near by sought to have it stopped because they claimed there were restrictions upon the land forbidding any kind of a business place being erected. There were suits and injunctions but the place was built and occupied while the matter dragged along in the courts. A few days ago the supreme court decided that the restrictions should be enforced and this means that the building must be vacated unless some compromise is reached.

New York Dealers' Officers—At the annual meeting of the stockholders of the New York Automobile Trade Association the following were elected officers for the ensuing year: Frank Eveland, A. G. Spalding Brothers Co., president; John T. Cutting, Oldsmobile Co. of New York, first vice president; E. C. Partridge, Wyckoff, Church & Partridge, second vice president; Ben Blumenthal, West End Auto Palace, treasurer; Walter R Lee, secretary and manager. An amendment to the by-laws providing that all officers except the secretary shall be chosen from the members of the board of directors, was unanimously carried, thereby increasing the number serving on the board from nine to twelve. The remainder of the ticket nominated to serve as directors and unanimously elected are: C. Andrade, Jr., R. M. Owen Co.; William Harradon, Victor Auto Storage Co.; Richard Newton, Atlantic Motor Car Co.; C. P. Skinner, Mitchell Motor Co.; R. B. Van Dyke, American Locomotive Automobile Co.; Peter Fogarty; S. B. Bowman, S. B. Bowman Automobile Co.; George Bennett, White Co.

Washington Trade Brisk—Brisk sales are reported by the motor car dealers of Washington, D. C. The Motor Car Co. claims the season's selling record of eight cars in 10 days, four of them being Thomases, while the balance were Stevens-Duryaes. The Luttrell Co., agent for the Packard and Buick, reports having booked many orders, while the Cook & Stoddard Co., Charles E. Miller & Brother, and the Dupont Co., are close behind in achieving sales records. Altogether the situation is very promising in the national capital, despite the fact that this is a presidential year, always a bugaboo to business men.

Is Western Representative—Ernest L. Smith has become identified with the Standard Roller Bearing Co. as its western representative, with headquarters at Detroit. Mr. Smith was connected with the Timken Roller Bearing Axle Co. for several years, which position he recently resigned to effect his present connection. Announcement is made by the Standard Roller Bearing Co. of the recent installation at its factory of a thoroughly equipped testing laboratory, in charge of Walter H. Hart, an expert chemist formerly connected with the Alan Wood Iron and Steel Co.

Recent Tire Victories—Of late the Michelin, Pennsylvania and Continental tires have been in the limelight in recent motoring contests. The Michelin people announce that at Jamaica the Hotchkiss and Isotta cars, which created new world's records and won six events, were fitted with Michelins, which, coupled with the Michelin victories in the Targa Florio, Briarcliff, Savannah and Ormond, make them feel proud of the fine performances. The Pennsylvania makers point to their triple victory at Baltimore, where E. L. Leinbach, in a Stearns, won the 100-mile race, the Pimlico handicap from scratch and a 5-mile race for stock touring cars. From the Continental camp comes the story of the work of D. Resta in a 72-horsepower Mercedes, who made 93 miles an hour pace in the race for 90-horsepower cars at Brooklands, England.